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ASHMEAD (A.S.)

**SUPPRESSION**  
**AND**  
**PREVENTION**  
**OF**  
**LEPROSY**

**ALBERT S. ASHMEAD, M. D.,**  
**NEW YORK.**

**Late Foreign Medical Director, Tokio Hospital, Japan.**  
**Member of the American Medical Association.**

*presented by the author*

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BY  
ALBERT S. ASHMEAD, M. D.  
Late Foreign Medical Director, Tokyo Hospital, Japan.

“J'ai maints chapitres vus,  
Qui pour néant se sont ainsi tenus.”



NORRISTOWN, PA.:  
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TO  
THE MEMORY  
OF  
WILLIAM ASHMEAD, M. D.  
OF  
THE COLLEGE OF PHYSICIANS  
OF  
PHILADELPHIA.

387366





## P R E F A C E.

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I introduce this book by publishing the following letter and a circular issued by me to all leprologists. The object of the congress therein referred to, is the suppression and prevention of leprosy by the formation of an International World's Committee. I also publish an appeal to the benevolently inclined for a fund for the use of this committee.

Contributions of money for the relief of leper asylums existing, and the foundation of new ones, may be sent to the author. Donations of clothing, aseptic bandages and gauzes, etc., will be forwarded by the author to the asylums in which they are needed.

NEW YORK, January 22, 1897.

*Dear Sir*—I have received from Dr. Petersen, of St. Petersburg (dated January 2, 1897), the following information: "Our illustrious colleagues, Hansen, Koch and Lassar, have received the consent of the German government to invite delegates from all countries for an *official* conference in Berlin. I have decided to attend this conference as the official delegate of the Russian government."

In consequence the following circular has been issued by Dr. Goldschmidt and myself.

Very truly yours,

ALBERT S. ASHMEAD.

A BERLIN !

*To all Leprologists*—Leprosy has of late become an universal danger. Old endemics are spreading, immune countries and nations have been invaded by this dreadful scourge. It is now better known than it used to be, and our diagnosis of

it is clearer. It is now possible, thanks to the discovery of the bacillus, to recognize the disease at an earlier period, and in cases where formerly the diagnosis would have been very doubtful. Vestiges of extinct leprous endemics have also been identified. By the side of these relics of antiquity, new cases have sprung up, that is, there has been a new inoculation.

Are we entitled to a strong hope to save populations, newly invaded and threatend in their very existence, since the beginning of the century, for instance, the Sandwich Islands, and the Republic of Colombia? We know that in Norway and Sweden, perseverance and intelligently adopted laws of isolation have, in a certain measure, overcome the endemic. Even in the Sandwich Islands, the situation is considerably improved since stringent measures of isolation have been adopted and enforced. In Colombia, where no such reforms have taken place, leprosy has increased in forty years from 400 cases to 27,000. "What will be the situation," says United States Minister Luther F. McKinney, "in forty years to come?"

Dr. Goldschmidt, formerly of Madeira, now at Paris, has brought forward the idea to convoke an International Congress of Leprologists, and representatives of all governments interested in this matter, to discuss the best measures for the suppression of leprosy, and the prevention of a threatened devastation of the world, like that which occurred in the middle ages. It is proposed that each government interested in the subject of leprosy, shall be invited to send an official delegate; these delegates to form a permanent committee, which will meet at stated intervals, and to which all questions concerning leprosy, in every country, will be submitted. The following well known leprologists have announced their approval of this scheme:

DR. LOUIS F. ALVAREZ, Hawaii.

DR. BOUFFE, Paris.

DR. JUSTIN F. DONOVAN,

Jamaica, W. I.

DR. J. G. KERR, Canton, China.

DR. AZEVEDO LIMA,

Rio Janeiro, Brazil.

DR. P. A. MORROW, New York

DR. A. MOURITZ, Molokai, H. I.

DR. O. PETERSEN, St. Petersburg.

DR. A. BLASCHKO, Berlin.

DR. J. DE D. CARRASQUILLA,

Bogota.

DR. S. P. IMPEY, Cape Town, S. Africa

DR. S. KITASATO, Tokyo, Japan.

DR. SOUSA MARTENS, Lisbon.

DR. W. MUNRO,

London (St. Kitt's, W. I.)

DR. A. NEISSER, Breslau.

DR. A. C. SMITH, Tracadie, Canada.

HON. WILLIAM O. SMITH, President Hawaiian Board of Health.

The following governments have agreed to send official delegates : Hawaii ; Colombia, South America ; Cape Colony, South Africa.

The following governments have been appealed to, to send official delegates : Great Britain, United States of America, France, Russia, Germany, Italy, Spain, Mexico, the Republics of South America, Japan, China.

Queen Victoria has expressed, through her Private Secretary, Sir Arthur Bigge, her interest in the enterprise. The American Minister, Mr Chas. Denby, of Peking, offers to use his influence with the Chinese government for the appointment of an official delegate.

The thing to which Dr. Goldschmidt and myself attached the greatest importance, was that there should be formed a general committee, composed of official delegates from all governments. Discussions of leprologists, about etiology, etc., were of secondary importance, for whatever is known about leprosy can be learned by any physician, without attending a congress. Moreover, it is generally admitted that there is no cure for leprosy. Therefore, prevention and suppression of leprosy can only be obtained by segregation, enforced, of course, by law, and to that effect the meeting of official delegates, not of scientists, was required.

The question of the place where the congress was to meet, was, of course, of inferior importance. We naturally thought of Bergen first. As the Scandinavian government seemed to be afraid to take so much upon itself, we turned our minds to London. There we found an obstacle in the general disbelief in contagiousness. Then Moscow was proposed ; and finally, independent of Dr. Goldschmidt and myself, an effort was made and proved successful, to obtain from the German government an invitation to other governments to send their delegates to Berlin. This sending of delegates was what we had been fighting for ; it is our plan exactly. Therefore, we renounce our own scheme of calling a meeting at Moscow, content to find our wishes realized, whatever may be the seat of the leprosy congress.

Respectfully,

ALBERT S. ASHMEAD, M. D.

*New York, January 22, 1897.*



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**DEATH-BED SCENE OF FATHER DAMIEN.**

Rev. Father J. D. de Venster, Catholic priest of Kalawao, Molokai, on his death bed twenty-four hours before dissolution. (Father Damien died April 15, 1889.)

This photograph was taken by Mr. Dutton and Dr. Swift. It is the last one taken of him. The photograph here published was so by permission of Mr. Joseph Dutton, of Molokai, Hawaii.

This gentleman has, during ten years, washed some lepers every morning upon his front porch. He is an ex-U. S. Army officer, who has devoted his life to this work, singular, yet admirable, considering the deep feeling of humble Christian charity inspiring it. A New York paper announced last week that Mr. Dutton had been stricken with leprosy, and was dying of it. He wrote, however, to Miss E. Harper, of the Damien Institute, on the 24th of December last, and it does not seem that anything was the matter with him at that date. "We should be the first to know it," says Miss Harper. "I am in constant correspondence with my friend." Miss Harper writes me January 15, 1897:

"J. Damien de Venster (Joseph) was the baptismal name of the priest Damien, his name in religion. I think it must always have been his custom to sign J. D. de Venster, Catholic priest. It was so in any communication sent to me.

"Mr. Dutton is an ex-U. S. Army officer; was on the staff of a Wisconsin regiment whose Colonel was Hon. Wm. P. Lyons, of Madison, Wisconsin. At the age of eighteen years, or thereabouts, he volunteered for the first three months of the Civil War; then with his comrades veteranized (I believe that is the term) for the whole war. At that time his name was Ira B. Dutton. Subsequently he was converted to Catholicity, and took in baptism the name of Joseph."

The Rev. Father Mulhane, of Mount Vernon, Ohio, in a letter to the author, dated February 3d, says, "Donohue's Magazine, of Boston, in this month's number, says that Mr. Dutton has leprosy, but that is a mistake, I think."

Under date Kalawao, Molokai, February 25, 1897, Mr. Joseph Dutton writes to me as follows:

"About the New York newspaper's report that I had contracted leprosy, I don't know the source of that report.

"In 1889, there seemed to be some manifestations. I mentioned it to Dr. Morrow who just then made his visit here, and to Dr. Emerson, then President of the Board of Health, who accompanied Dr. Morrow here. But later the appearances seemed to subside, and I dropped the matter.



"Now, again, in the past year, there has been numbness of the left foot, shedding, to some extent, of the eyebrows, with intense itching there, from time to time, daily. Yet I have not mentioned it to anyone until in the past week. The correspondents who have mentioned the report you speak of, I have made reply to in contradiction. That is, so far as I have had time to make reply. Several are not answered. For these I shall be moved to inform differently. Strange it is, in the meantime a new feature has appeared; a mark chiefly defined at the edge, about one-third the size of this sheet (ordinary note paper), on the foot, left. Last night I showed it to Dr. Oliver, at present the physician here. He will not admit leprosy. Now speaks of herpes, etc. Of course I cannot say leprosy, until found a leper upon medical examination; but my private belief is that it is leprosy. I hope so. That will settle it. I dislike for things to be undecided.

"Dr. Oliver, out of a tender regard for me, don't like to see leprosy in it. He can only look at it in a natural way. He cannot possibly understand the supernatural view of it that a practical Catholic has. And it is that supernatural view only that is of much interest to me.

"One point only, in a *natural* sense, might be of value. That is, if I were to die not a leper, the case might be of some use to the medical gentlemen, by reason of my having been so intimately associated with the disease for so many years. While my conscience is clear as to precautions that were expedient, there must have been ample opportunity for contracting the disease in unavoidable ways, particularly on account of the crude manner of living in the earlier part, as eating food handled and cooked by the lepers employed for that purpose, etc. There was no other way practicable at first. In fact it is only in the last year that there have been entirely different arrangements about that.

"Any way, the case will probably prove itself before long. '*Probably*,' for the movements of leprosy are so queer."

I still hope that Mr. Dutton will not have a further similitude to Father Damien, than the name which he has adopted, although he evidently takes a very bad, or rather hopeful, view of the matter. There are men, very good and great men, who have a pathological love for martyrdom, and it appears that Mr. Dutton is one of them.

The day when a church, in such a cause, required mar-

tyrdom from its professors, is past long ago. Supernaturalism belongs to the middle ages. Such men as Father Damien and Joseph Dutton have been born too late. Holy water, the waving of banners, processions, incense, can do nothing whatever for the solution of the leper problem. The twentieth century wants to protect the healthy, and thus to destroy the disease surely, effectively, forever.—[THE AUTHOR.]





## HISTORY OF THE MICROBE.

“ J’ai maints chapitres vus,  
Qui pour néant se sont ainsi tenus.”  
*Lafontaine.*

Leprosy is the oldest disease of which we have record. The earliest district in which it was known, according to our records, is Egypt. It is supposed that its birth-place was there. At any rate we cannot trace it farther back than the historical times of Egypt. The first historical record of leprosy may be dated back to 1350 B. C., and it is supposed to refer to 4200 before Christ. At that period negroes were slaves, carriers of wood in Egypt. This Nile country being forestless, the timber had to be brought from the centre of Africa. And it is presumed from this fact that negroes had something to do with the introduction of the disease into Egypt. Had there been timber in Egypt there would have been cremation there, instead of that celebrated mummification. Mummification of the dead leper's body may have kept alive for ages the germ of leprosy; cremation would have destroyed it. Inhumation imprisons the germ, if it does not destroy it through putrefaction, as we know, I believe, perfectly well, from examination of leper graves, where only putrefactive bacteria have ever been found. It is known that earth worms do not carry to the surface the leper bacillus, as they would do tubercle and anthrax bacilli. We know that leprous germs remain latent and living for many years in the human body, after the latter has been inoculated. I think I can say that if the custom of mummification had never existed leprosy might have ceased centuries ago. It might never have spread in Egypt with our present Christian inhumation.

In Japan, where inhumation and cremation are both burial methods, the leper is not allowed the cremation ceremony. Now, if one of the methods destroyed the germ, and the other kept it alive, the Japanese, in the course of a thousand years, would be very likely to discover the fact. Therefore we may be sure that neither of these manners to destroy the corpse, one by slow putrefaction, the other by incineration, can be in favor of the bacillus. We may therefore admit that the Japanese who are considered now as a very intelligent people, understood that inhumation as well as cremation were not in favor of the bacillus. Leprosy, in Japan, has been kept alive, not by allowing the dead body to infect the living, but by allowing the living body to contaminate the living body. In Colombia, South America, a Catholic country, they bury their dead, and yet are there 27,000 lepers, because they do not bury their living—that is, isolate their lepers.

It is while the sick body is living that everything must be done to prevent its influence on healthy bodies. When the microbe is under the earth, away from contact with the living, there is no danger.

#### DISPERSION BY HUMAN CURRENTS.

Jews and Arabs, and perhaps Semitic tribes, disseminated leprosy. The dispersion of the Jews carried it through the Roman Empire. The Portuguese and Spaniards are supposed to have carried the germs to the west coast of Africa, and with or without their slaves, to the Atlantic and Pacific coasts of South America.

Leprosy has existed in China since the Chow dynasty, 1122–314 B. C. It is supposed to have been brought to China from India. India is supposed to have been infected by the Arabs. Japan received her inoculation from China and Corea.

Thus leprosy was spread always by human currents—that is, by the emigration of infected men.

In order to understand how important it is to know that human currents have carried about the disease, we will say

this: The bacillus, as far as we know, can only live in the human body. It must die with the human body in which it has lived unless the body is preserved by some external agency. It follows that if every leper died, and his body would be forever removed from contact with any living body, the germs would die with him, and the disease would be eradicated. Dr. Bevan Rake, of Trinidad, experimenting in the leprous cemeteries, showed that there was no pollution of water or soil produced by the dead body, no bacillus could be found in either element. In cholera the germ pollutes the water, in tuberculosis it pollutes the soil; but in leprosy, with the decay of the body, as far as we know, the germ perishes.

At the time of the exodus of the Jews, the latter were contaminated. Justinus, the Roman historian, says that the Jews were expelled from Egypt because they were "itchy." The commerce between Egypt and Arabia, antedated the exodus by a thousand years. The Arabs might have caught it from the Egyptians (or have infected them) or their slaves the Jews, or their slaves the negroes. These two peoples, Arabs and Jews, have dispersed the germs all over the world. China certainly received her inoculation with her religion from India, and India received it from the Arabs.

From the thirteenth to the sixteenth century, leprosy was in every country in Europe. Isolation of lepers has eradicated the disease from every country of Europe, excepting Norway and Spain. It is my opinion that the fish diet existing in these two countries, and in nearly all countries where leprosy exists, has some still mysterious connection with the etiology of this disease. New inoculations, from time to time occur, but isolation diminishes their number.

All we can know from these facts is: 1. That the mode of burial has something to do with the spread of the disease. 2. In the living human body, human currents are its carrier. 3. The germs may remain latent in the human body living, or dead (if not cremated, or safely, that is, deeply, buried). Perhaps the germ may, in a buried body that is preserved, remain latent for a thousand years. With mummies have

been found some cereals which have been planted and prospered and brought fruit. This makes the forthcoming of power in a microbe condemned to inactivity for centuries comprehensible. In countries in which leprosy has once existed, and from which it has disappeared, it may be resuscitated by the reappearance by exhumation of human remains, that in some way have been preserved, having still in them the originators of the horrible disease, ready for a new campaign. Old cemeteries are sometimes destroyed, and their occupants carried into other places. In countries which are leprous, or have been leprous, or indeed in any country, some infection may have been carried into a grave, and laid dormant, from which such a transference is quite natural. In families where ever a leper has existed, the bodies of the members, who died apparently healthy (from leprosy) should all the same remain unmoved.

This may explain the revivification of the leprosy of France. We need not think, as Drs. Leloir and Zambaco do, that there is that horrible monstrosity which they call an autochthonous leprosy. This simple explanation will suffice.

I am afraid that what I have said of human currents will not very well be understood by those people, who, although interested in things medical and ethnological, yet have never had much time to give to such questions. We mean by human currents the emigration of large bodies of humans into far-off countries.

The result of my investigations of pre Columbian leprosy (that is, leprosy existing in America before the discovery), showed to the satisfaction of the Smithsonian Institution that leprosy was not here before the Spaniards and Portuguese introduced slavery. But there is no positive proof that the negroes brought the disease with them. We know that their masters brought it. It is not absolutely proved that any body of negroes in America, indeed that any negro of the west coast of Africa at all ever was affected with leprosy, before he came and remained in contact with his masters, that is the Spaniards and the Portuguese. Now, the disease



existed in the Hispanian Peninsula in the time of Charlemagne, and has enormously spread there, and exists there still. It extended into Portugal, especially after the expulsion of the Jews from Spain. The inoculation there was a double one, Arabian and Jewish, and the Spaniards being a fish-eating nation, were peculiarly disposed to leprosy. The Portuguese brought the first cargo of slaves to this country, and the disease was certainly in the masters, not in the slaves. There is no reason to believe that the English slave traders ever brought leprosy to America. Their slaves were landed in Jamaica and Louisiana. Leprosy in Louisiana did not come with the negro; it came from French Acadia. Had it come with the black, why should only the parts occupied by the Acadians be affected, and the rest of Louisiana be always spared? In Jamaica slaves intermingled with the Spaniards, who had preceded the English. The negroes which were brought to South America belonged to the same race, and perhaps families, as those who were brought to our cotton states. Why should the South American negro be a leper, and the North American be free of the disease? The Indians of South America who came into contact with Spaniards and Portuguese and their negroes, became lepers. Our Indians in the north of America, who had no such intercourse with Spaniards and Portuguese, though they had, on the other hand, a continuous and intimate intercourse, to the point of intermarriage, with the imported slaves, have never become lepers. Our object should be to stand in the way of that power of human transmission, by sanitary measures.

The disease was certainly brought to Hawaii by a human current. It was brought by the Chinese. No precautions were taken at the time when the Chinese imported this thing, which is generally believed to be the utter destruction of the Kanakas. No efforts were taken to protect this people before almost all hope of preserving the race was extinct. The Chinese themselves have shared in the misery they have brought. But the Japanese, who since 1885, number twenty-eight thousand, and who are as leprous a race as the Chinese,

have neither brought leprosy, nor become contaminated. How is that? The Hawaiian Board of Health, for the last ten years, has defended itself against a new importation by having every Japanese emigrant examined before his starting in Yokohama, and at his arrival at the island, and also by keeping him under observation for seven years. The Chinese had not to submit to the same rules; otherwise much better results would have been obtained. But everybody who looks at the situation will see that the pressure of the Hawaiian government, on the Japanese emigration, although it cannot perhaps prevent the destruction of a doomed race, has done very much for the country. And no doubt much more would have been effected, if the protective measures taken against the Japanese had been sooner made rules for importation of men from any leper country.

From these facts we deduce the following rules, whose observation must lead to the total extinction of leprosy:

1. The dead body of a leper should be cremated, or at least deeply buried, and not only should all lepers be buried in a special cemetery, but also the rest of their family, although dying apparently free from leprosy, because they might have the latent germ. No leprous cemetery should ever be disturbed; no exhumation should ever be allowed.

2. Every emigrant from a leprous country, should be, in his own country and before he departs from it, inspected by a competent leprologist officially appointed by the government of the country to which the man wishes to go; at his arrival, there should be a second examination, and then the emigrant should be kept under surveillance for seven years by the board of health of the place where he has established himself.

3. In the United States the preceding rules are of the highest importance, because there is here a perpetual influx from China, Japan, Norway and South America.

## NON-CURABILITY OF LEPROSY.

Leprosy is incurable. From time to time alleged cures are reported. M. Leloir mentioned two cases of cure observed by Dr. Kaurin, of Molde, Norway. Unna, of Hamburg, claims to have cured a woman. "But," says Dr. Hunt, of Buenos Ayres, "Dr. Unna's conclusion is unscientific, for he did not take into account all the considerations which might have saved him from criticism. In the first period of the disease it happens frequently that there seems to be improvement, and even a false appearance of cure. This deceiving appearance may remain for years." Dr. Goldschmidt, of Madeira, claims to have cured a case of incipient tubercular leprosy by the application of euophen oil (iodine in a nascent state). The case was very mild. Six years have elapsed, and he says that the "cure" remains. Dr. Alvarez, of Honolulu, after Goldschmidt, tried the euophen treatment, in Hawaii, "with negative results." Dr. Hitt, of St. Louis, reports a cure of anæsthetic leprosy, with perforating ulcers of the feet, in a Hindu, which he claims was effected with elixir of iodo-bromide of calcium compound (iodine in a nascent state), manufactured by the Tilden Company, of New Lebanon, New York. I publish his letter:

"ST. LOUIS, MO., September 21, 1896.

"*Dear Doctor*—The case of leprosy you mentioned was the son of the chief of a village, near our town, Mungeli, C. P. India.

"Gunga had the anæsthetic type of leprosy. The plantar ulcer, which was the worst feature of the case, certainly healed nicely under the elixir iodo-bromide treatment. Now, please do not understand me to say that Gunga has *surely* been cured, for leprosy, like many other diseases, has been known to return after apparently being cured. I will quote from a letter received from Mr. Gordon, who was born and lived in India, where leprosy is as common as phthisis pulmonalis is in America. When I left India Mr. Gordon took up my work in Mungeli. In his letter, after speaking of other cases, he says: 'Gunga has now been taking his medicine almost a year, and is apparently well. The only thing he complains of is a slight tingling in his hands at times.' The

slight anæsthesia or tingling can be overcome by applying a ten per cent. solution of pyrogallic acid to the affected parts twice daily. I should have given you in the first place a copy of the note I made in regard to this case in my record-book, which is as follows :

“ NAME OF PATIENT :

Gunga.

DISEASE :

Anæsthetic leprosy.

“ Remarks. Gunga had used chaulmoogra oil until it made him sick. It is hard to retain, and the patient's stomach became so deranged that food could not be retained, hence the rapid decline in health noticed. The second and third day after taking the elixir iodo his body was covered with an eruption, and he had fever. (The temperature generally runs up from two to four degrees during the first few days while taking either iodide potash or elixir iodo.) I reduced the dose and he got better. The nodules gradually receded. His appetite improved and he gained in every way. I then increased the dose of elixir iodo to a tablespoonful every three hours. I paid no especial attention to the plantar ulcers, save to have him keep them as clean as possible and to bathe them in solution iodo (Tilden's) twice each day. My reason for this was to see if the medicine taken internally would do him any good without local treatment. The ulcer on the right foot healed over nicely in a short time, and the left gradually filled in until it too entirely healed. His face lost the bloated appearance and the profuse perspiration which had given him so much trouble ceased, and he improved in every way.

“ About one year later I received the letter from Mr. Gordon telling of his apparent recovery.

“ Danielssen used the iodide of potassium for forty years in the treatment of leprosy, with a marked degree of success. I believe it was Leloir who collected records of over two hundred recoveries where iodide of potassium had been used. As the elixir iodo is so much better than the plain salts, I see no reason to doubt that where the treatment is *persisted* in why it will not effect a complete cure. I believe a man should take the elixir iodo at least three years. I have used everything nearly that has been recommended, and know of nothing that will do as much for these cases as the elixir iodo.

“ I believe that it will do more for cases of tubercular leprosy than cases of the anæsthetic type.

“ My friend, Dr. S. C. Durand, of India, has reported several cures where fluid extract of ergot had been used.

"I send you in this a picture of Gungas' feet, showing the plantar ulcers. I have no picture of him that has been taken since I left, as there is no one in the place to take one.

"I have hesitated about reporting some of the cases I treated, simply because I felt sure that some one would cry out: There is one more quack. I suppose the College of Physicians and Surgeons, of St. Louis, in which I held the Chair of Dermatology, can speak for me on that score.

"I have made two trips around the world, and have seen lepers in most every part of it. My only desire is to find out what will help these poor unfortunate people.

"If any government, either in South America, Europe or Asia, will pay expenses, I will cheerfully go and treat their leper cases. I do not use elixir iodo to the exclusion of all other drugs, neither have I seen two cases which could be treated exactly the same."



Dr. A. W. Hitt's case: Feet of Gunga, showing plantar ulcers of Leprosy.  
(MAZGOOSE, C. P. INDIA.)

I asked Dr. Hitt whether he was sure that it was a case of leprosy, and not a case of mal perforans; whether he dis-



covered the bacillus. My doubt about the curability of any case of leprosy is so great that I need strong proofs of its identity. Here is his reply :

"There is no doubt in my mind whatever that the case I reported was anything else than anæsthetic leprosy. After having seen thousands of cases, having known this man and the history of his case, I feel sure that he *has* anæsthetic leprosy. I do not claim, as I explained in my last, that a radical cure has been effected, as time alone can decide that.

"For over a year he complained of having fever occasionally. The burning and tingling, in patches, over various portions of his body, and especially on his forearms and the backs of his hands, lancinating pains along the course of the nerves, were all noticed at least a year before the appearance of the plantar ulcers. He was almost a giant, was strong and healthy before this attack, and had never had syphilis. He associated with lepers. There were 6600 in the district. Many were about him. I did not find the bacillus. I agree with Morrow, Ohmann-Dumesnil and Keber when they say that it is not the rule but the exception to find the bacillus in many well marked cases of anæsthetic leprosy.

"In the Dehra Doon Asylum, N. W. P. India, I saw very few running or open sores. I fully believe that we can stop mutilation in at least sixty per cent. of our cases, etc."

Many observers have expressed an opinion that in anæsthetic leprosy the bacillus is not found in the discharges. But they cannot affirm that it is not somewhere in the body. Therefore the failure to find the bacillus in this case would not prove that it was not a case of leprosy. I showed the correspondence to Dr. Morrow, who shared my opinion that it was a case of leprosy. My treatment of a thousand cases of leprosy, in Japan, was at that initial period when the bacillus played a very modest part in the medical world. Since I have left the East I have had occasion to treat other cases, and always found the bacillus.

Dr. Hitt, as may be seen, does not claim a radical cure of his case, which, therefore, cannot serve as a proof of the curability of leprosy.

As to the curability of leprosy by iodine, Hansen says : "At the beginning of his studies in leprosy, Dr. Danielssen

had great confidence in iodine, but he soon learned what a very dangerous remedy it was in this disease. Even small doses of iodine produce new eruptions of leprosy, tubers or patches, and Dr. Danielssen therefore ultimately used it as a test in cases of apparent cure. When a patient was considered cured he gave him iodide of potassium, and if no new eruption developed the cure was considered complete."

Dr. Hansen does not believe in the "cures" reported by Danielssen's treatment.

Col. G. M. Bowie, of White Castle, Louisiana, a philanthropist, who has set his heart on finding a remedy for leprosy, and who is deeply interested in the conditions of the lepers of his state, recently reported to me an alleged cure in 1887, at Bayou Lafourche, Louisiana. He sent me the following letter from the father of the alleged leper:

"CUT OFF, LA., August 1, 1896.

"G. M. Bowie, Esq.,  
White Castle, La.

*Dear Sir*—Received yours of the 10th inst., and, in reply to your questions, state that it is true that one of my sons was cured (in 1887) of a certain disease pronounced by many as leprosy, and, in my belief, permanently. He is now 31 years of age, and does not suffer in the least; his limbs are somewhat distorted, but not sufficiently to keep him from fishing in a pirogue. He can paddle at least fifteen miles on a stretch without being inconvenienced. The formula of his medicines I cannot give, not knowing them. All I can say is he was cured by an old Mexican, living in Arizona, whom I am told is dead. He was introduced here by a creole of Lafourche, named Bourgeois, but the whereabouts of the said Bourgeois to-day is unknown to me. The residence at that time of Wilson Bourgeois was Florence, Arizona. Perhaps by writing there you might get more ample information.

"If you think you are in need of any information that I can give you, write and I will take pleasure in answering any questions on this subject to the best of my ability.

"Respectfully,

"EMILIEN GISCLAR."

The case is referred to in Dr. Joseph Jones' Medical and Surgical Memoirs, Vol. II, page 1232. (Dr. Jones was Presi-

dent of the State Board of Health of Louisiana.) But no mention is made of any cure. Col. Bowie is trying now to find out the Mexican treatment supposed to have cured the case, from the widow of the doctor, who now lives in Florence, Arizona. Under date of August 11, 1896, Col. Bowie says :

"I received a communication from the widow in Arizona stating that her husband had taken up the cure of leprosy, and had come all the way to Louisiana to find a case. This case, she claimed, was cured by her husband, who got the remedy from a Mexican, whom he carried with him. The husband died shortly afterward."

The history of the family of this case as reported in Jones' Memoirs is as follows :

"Leprosy of Lafourche, in many cases, if not in all, can be shown to be imported. This is the case of Mr. G., living on the left bank of the Bayou Lafourche, about two and one-half miles below Harang's Canal. The following facts were ascertained by actual investigation : Mr. G., aged about 40 years, father of ten children, six boys and four girls ; wife of Mr. G. living, in good health, etc. \* \* \* Only one child of Mr. G. is affected with leprosy, a young lad of 16 years of age ; he presents appearance of a boy of 10 years of age ; face nodulated ; has lost one or more joints of the fingers of each hand ; also the joints of several toes ; has suffered with ulcers on legs and feet, which are swollen and discolored ; walks with a halting, uncertain gait. His leprosy is of anæsthetic variety, manifested by want of sensibility in hands, etc. \* \* \* Mother of G. was attacked by leprosy in 1858 ; died 1872. One child, Mrs. B., a leper ; appeared five years after the disease had developed in her mother. Mr. G. has ten children, and only one a leper."

Dr. G. Farrar Patton, Secretary of the State Board of Health of Louisiana, writes in reply to my inquiry regarding this alleged cure, as follows :

"NEW ORLEANS, September 25, 1896.

"No record exists in this office giving particulars of individual cases of leprosy ending in recovery. \* \* \* I have referred your letter to Dr. Hamilton Jones, son of Dr. Joseph Jones, with the request that he will look the case up in his father's notes, and, if possible, give me the information you seek."



There does not seem much to be expected from that quarter.

"WHITE CASTLE, LA., November 14, 1896.

"*Dear Dr. Ashmead*—I am still after the Mexican remedy which is supposed to have cured the son of Emile Gisclar, whose letter I sent you. The latest proposition is to treat leprosy internally and externally with dissolved sulphur, a bottle of which I have handed to Sister Hyacinth, Dr. Hooper, physician in charge, having just died suddenly of heart disease. I have not seen her since. It certainly can do no harm, and is known to be a fine disinfectant.

"Yours truly,

"G. M. BOWIE."

"NEW YORK, November 17, 1896.

"*Dear Col. Bowie*—The old saying is that there are three kinds of skin diseases. The first can be cured with mercury; the second can be cured with sulphur; and as to the third, even the master of sulphur himself cannot cure.

"I am sorry to say that it is my opinion that the chemical operator last named himself could not cure leprosy, even with the help of Sister Hyacinth. Should I be proved to be in the wrong, so much the better. My opinions have not brought me in so many hundred thousand dollars that I should grieve to be shown to be in the wrong, even if my natural love for my own species did not make me wish to be in the wrong.

"Yours truly,

"ALBERT S. ASHMEAD."

I take the following lines from a lecture of Dr. Wm. Havelburg, of the Hospital dos Lazaros, Rio Janeiro, Brazil, delivered in the Berlin Medical Society, on the fourth of November, 1896:

"A number of years ago Unna proclaimed a cured case of leprosy by means of a combined treatment with ichthyol, pyrogallic and chrysarobin salves. This patient came from Rio Janeiro, and died about two years after her return from Europe of lepra cachexia. The most different antiseptics, from the oldest to the most modern ones, of which I want only to mention eucrophen, formalin, and nosophen, used inwardly and locally, as salves or injected into the tumors, have shown no real effect. Tuberculin injections, which have

also been used years ago, have had also a very harmful effect upon lepers. We have seen sometimes that lepromas have disappeared on parts which were affected by an erysipelatous attack. I have therefore tried, as has been done in carcinoma, to inject cautiously erysipelatous cultures. The patient got an erysipela but the lepromas remained. Last year I have tried methodically the erysipelous serum prepared by Emmerich and Scholl without any result. From Colombia reports very premature, and little able to provoke confidence, have been thrown into the world about an alleged serum therapy. After a conscientious study of all the therapeutic experiments which have been tried, I think I may affirm that there does not exist in this moment any specific or causal treatment of leprosy. I do not mean to say that the disease is incurable, but if we wish to be critically just to the means employed, which consists in a treatment by salves and mechanical destruction of the lepromas, we shall not put the cures or the improvements to their account. Success is too exceptional for that. Without our doing anything for it, lepromas disappear sometimes. Armauer Hansen, very truly and very strikingly says both forms of lepra are curable. For patients affected with tubercles cure is very rare, while it is the rule for maculo-anæsthetic cases. Tubercous lepers die generally long before the disease has had its course. For the maculo-anæsthetic form the cure of lepra is almost unexceptionally the case. But what remains after the cure of lepra, varies considerably, sometimes a quite tolerable body, with quite good strength, but mostly a miserable rudiment of a man, with more or less paralyzed and deformed hands and feet, with unclosable eyes, in which the lower part of the cornea is darkened, and from which the tears continually run down over the cheeks; with paralyzed muscles of the face, which cannot shut the mouth, so that the saliva flows continually. But they may live long and reach a very old age, if this, under the circumstances, may be considered as an advantage. However, there are many means by which we may contribute to the well being and to the relief of the sufferers. But our efforts can only be directed to a symptomatic treatment."

Dr. Azevedo Lima, of the Hospital dos Lazaros, Rio Janeiro, in his last report to the Governor, says this about the modern treatment of leprosy :

"The data on which is founded the serum treatment must, by their experimental character, have carried conviction

to every mind, for many of them represent acquired truth and are of great importance. In their acquisition, there has been nothing of chance. The whole is the logical result of a series of demonstrated facts, of successive experiences, admirably arranged. In regard, for instance, to diphtheria we have the discovery of the bacillus of Loeffler, ascertainment of its seat of action, demonstration of its species, reproduction in the animals of a disease identical with human diphtheria, relative isolation of the toxine, physiological and chemical study of the terrible activity of this poison, immunification of the animals by the prudent and progressive action of this soluble substance, transmission of the acquired immunity by the injection of the serum of the blood of the immunized animals into others, and finally its application to the prophylaxis and therapeutics of human diphtheria.

“Colossal result suggested by the miscarried investigations of Koch, a result improved and generalized as a process by Behring and Roux!

“Without straying from the principal object of this report, we shall say that the studies on serumtherapy have advanced in these last times with startling rapidity, and everything leads us to believe that, thanks to the progress of bacteriological and biological knowledge, the application of this new process will give a stimulus to research, and that in a time not so much removed, we shall have the good fortune to see resolved that very complicated problem of the cure of leprosy, as has been that of diphtheria, of puerperal fever, and of tuberculosis, although the latter does not rest yet on a solid basis.

“Our observation, as well as that of others, has not allowed us to report favorable results with tuberculin.

“Years ago Professor Mosevig, of Moorhof, recommended pyoctanin (pus-killer), a substance of the color of aniline. It was his opinion that an injection of a solution of that drug has an intense bactericide action, and, as he attributed to the carcinoma a microbial element, he advised to use it in the treatment of this disease. With this assumption it was also used in the treatment of leprosy.

“Injecting it over a leproma, one observes a diffusion of the color of the latter in such a manner that, taking off a piece and examining it under the microscope, the bacilli appear colored as in a preparation specially made. These tumors do not show any modification. We tried then the application of the tuberculin, simultaneously with pyoctanin. From this combination resulted what was to be expected. The tumors, saturated with pyoctanin, assumed a blue color, changed themselves into small abscesses, and, in consequence of the reaction by the tuberculin injection, these necrotic masses were eliminated. The diffusion of the disease to a large extent of the cutaneous surface does not allow the application of this remedy, which, at the most, can be useful at the beginning of the disease, when the lepromas are very limited. They have nothing specific, as we shall see later on, when we shall treat of other sub-cutaneous injections.

“As early as 1891, Dr. Havelburg tried injections of cultures of streptococci of erysipelas. As it is of common observation, that when one of these patients contracts erysipelas, the lepromas recede, as if they were improving, which is also observed in carcinomatous and sarcomatous patients, the pure culture of streptococcus erysipelas was used as a therapeutic means. By this method several cases of cure of cancer have been published. On this foundation this experience was indicated to the patient, who accepted it with full hope.

“Of a pure culture prepared with the utmost care, 0.<sup>cc</sup> 1, was injected into the skin of the forearm. The patient fell into an intense fever, which gave way after a few days. This proceeding being continued, the erysipelas on the second injection extended through the whole arm, attacking even the axillary glandulæ. In this manner the patient suffered more than eight days, recovering meanwhile from the intercurrent disease.

“Keeping in view that the patient suffered already of a much advanced leprosis, generalized over the whole cutaneous surface, it was not possible to practise these injections on all the points of the body, without putting life in danger. Therefore he didn't continue, so that these proceedings have

not put in our reach the means of graduating the degree of virulence of a pure culture.

"As succedaneum of mercury in the treatment of syphilis, was recommended chromic acid and its salts. We soon experimented with this substance in the treatment of leprosy.

"The application was made in very weak solutions. As the patients complained of pains in the stomach, it was not possible to insist on the ingestion of these substances. On the other hand, when we have to do with lepers, we must use very cautiously such medicaments as irritate the kidneys, seeing that very frequently they are attacked with incurable chronic nephritis.

"We cannot say that we saw any result from the application of this acid. We must unfortunately say the same of the use of chlorate of potash internally." (He cites here Dr. Carreau's treatment of leprosy by toxic doses of this drug, which he was induced to apply to the treatment of leprosy by its known effect of increasing rapidly the hemoglobin of the blood. Dr. Carreau had noted the recession of lepromas in a tubercular leper who had been bitten by a viper. The poison of the viper is known to rapidly increase the quantity of hemoglobin in the blood.)

Dr. Lima adds: "Dr. Carreau says that he has obtained favorable results. As to myself, I say no. It is true that I did not use the drug in toxic doses, nor did I feel inclined to make that attempt.

"Among the antiseptic substances endowed with great activity, formalin has been recommended recently. It is a liquid which contains forty per cent. formaldehyde.

"This substance not being in the market, it was necessary to import it from Europe with the help of the administration.

"We applied this substance externally as a cautery and in frictions, mixing it then with lanolin.

"One of its disadvantages, both for the doctor and for the patient, is the very irritant smell which it spreads. The re-

gion treated becomes very red, ulcerates ; however, the cicatrization takes place promptly.

" It results from our observations that its effects are not superior to those of some other substances, like pyrogallic acid, and so forth, in external treatment.

" We have not noticed any specific action. We have used it also in the interior of the tubercle in doses of drops ; the tumors hardened, became as tanned, and were eliminated. Applying it once to the lobule of the pavilion (ear), the latter became hard as if the lobule had been frozen.

" The destruction of pathological alterations, which is produced by formalin, is identical with that of other caustics, and consequently, among so many other remedies, it hardly constitutes a novelty.

" During the last years divers drugs have been recommended, as iodoform, iodol, aristol, euophen, dermatol, sali-phen, iodophen, in general or local application. In respect to several of these, cases of cures have been quoted. Unfortunately our observations do not corroborate these recommendations ; at the same time, in their local applications, we have reasons to consider them as preferable to some other medicaments.

" In the report of 1894 we mentioned a case of cure, published by Dr. Jose Maria Raposo, in his inaugural thesis defended in the School of Medicine of Rio Janeiro, 1847. It treated of a person of the author's family, who, after having reached a deplorable condition, recovered his health, using 'golpho do rio ou gigoga' (*nymphæa albo viridis*), in decoction internally, and in local applications of the juice of the plant.

" Before such an encouraging observation, we had of course to experiment upon the 'gigoga.' Mr. Silva Araujo, a pharmacist, to whom I give herewith my thanks, furnished us a certain amount of fluid extract, sufficient to use for two patients during four months. One of them was suffering from tubercular lepra, the other presented infiltration diffused and maculous. In the first we noticed that some tubercles melted, and were replaced by an ulcerated surface, which afterwards cica-



trized, but the greatest number of the lepromas persisted; in the second the maculæ disappeared, but the diffused infiltration continued. The daily doses were from one to five grammes.

"In the absence of efficacious medication, the *gigoga* may serve as a subsidiary remedy.

"A substance much in use in medicine is the extract of the thyroid gland. Recommended originally in the treatment of goitre, and afterwards in that of myxedema, and in nervous diseases, it was found that it was also a very active drug against obesity. Finally it was recommended in cutaneous diseases, especially in psoriasis and ichthyosis. This being the case, it occurred to us to try it also in lepra, and it seemed to us that the cases with diffuse infiltrations may be susceptible to this treatment. Two patients took two pastils every day—of the extract of thyroid gland—containing fifteen centigrammes each. This treatment was continued for three months. It is true that the hardness of the infiltrations diminished a little, and the skin became thinner, but we did not observe any modification in the general condition which might induce us to continue the treatment.

"The serotherapy is the greatest novelty of the time, and it has imposed itself to the thought of the medical profession in regard to the therapeutics of infective diseases. Its effect in the cure of diphtheria induced the physicians to use it in other diseases. Anti carcinomatous serum is much spoken of, which is nothing else but the serum resulting from the immunization of animals against erysipelas. We have already mentioned that erysipelas has often a favorable effect in cases of cancer, etc. It was therefore logical that we should try it in lepra, especially as with this substance we have the means of dosing, which we had not in the application of the pure culture.

"Thanks to the thoughtfulness of your Lordship, I was sent to Europe, and I have brought back last year an anti-diphtheritic serum, which was gratuitously distributed.

"The preceding report has shown its favorable application. It behooves us also to mention that we have received

by the intermediary of your Lordship the anti-carcinomatous—that is, erysipelatous serum, of Prof. Emmerich and Scholl, in Munich.

“Twice or three times a week injections were made in five patients, beginning with a half syringe of Pravaz, and increasing gradually to three syringes. In each patient from fourteen to eighteen injections were made, applied to the lepromas and to the circumjacent tissues.

“We have observed that sometimes the injections produced no local irritation; at other times, phlegmons were formed. The patients caught a more or less intense fever. The abscesses were of variable size, and sometimes were formed without general or local reactions. All these accidents disappeared without presenting any gravity. In the injected places were observed reabsorptions, leaving hardly any cicatrices.

“From our observations we cannot conclude to any value of this treatment of leprosy, as little as in carcinoma

“It seems that our observations are concordant with those of different European authorities. This process has not received in the scientific world the acceptance which we had hoped for it.

“The influence produced by these injections is identical with that which we have observed with pyoctanin, as we have said.

“Injecting these substances into a leproma, its tissues are destroyed; if we inject them in the circumjacent tissues, we compress, by their adjunction, the blood vessels and lymphatic vessels which feed the tumor. In this manner the tumor must change, and these circumstances are the cause, that the reabsorption occurs with or without the formation of an abscess. The actions of the anti-carcinomatous serum and of pyoctanin, are here identical with that of an injection of alcohol, of phenic acid, etc.

“In these last times the papers have occupied themselves with the anti-leprous serum of Carrasquilla, Colombia. This notification was received, and had to be received, with reserve



by the medical authorities. The author says that he has inoculated animals with leprous tumors, from which he then draws the blood with which he prepares the serum, and that he has been fortunate enough to obtain cures. As to the latter fact, we can say nothing; as to the rest, we don't see much plausibility in it. As a matter of fact, no one so far has been able to inoculate leprosy into animals. Some publications made in this sense had to submit to very just criticisms, which deprived them of all appearance of truth. It is true that the cultures of certain pathogenic micro-organisms may be inoculated, which do not produce in the animal the specific disease, while yet a serum anti-toxic may be obtained. But the capital point, the basic point, is the inoculation of a culture.

"In the case of leprosy, as we have said, nobody as yet has succeeded in producing a culture of leper bacilli. The latter exist in the organism in a peculiar state, which, unfortunately, has caused all attempts at culture to miscarry; therefore when we inoculate a leprous tumor in an animal, we are very far from being able to consider this process identical with a culture inoculation.

"Theoretically, we believe that the serotherapy in leprosy will furnish in the future the solution of the problem related to its treatment. The alpha and omega of the question is the culture of Hansen's bacillus. Let us therefore plod on in this path as they do in other countries, in order to obtain the solution of one of those questions which will continue to be, we do not know for how much time, the indecipherable sphinx, of contemporaneous medicine. It is not worth while to treat of other empirical remedies. We shall only note that Danielssen, the distinguished Bergen physician, in his last book, published a year after his death, and which contains the sad results of fifty-five years of an extraordinary devotion to the study of that disease, says, 'that we do not possess as yet any specific against it.' Hopes are in favor of serum therapy."

Carrasquilla, of Colombia, South America, recently pro-

posed inoculation of lepers with anti-leprous serum—that is, blood drawn from a leper, inoculated in horses, asses or goats, and the transferring of the blood serum of the inoculated animals, in its turn, into lepers. He claims to have obtained “good results.” If we believe some of the latest reports, we might think that his cases have relapsed. However, a short time ago I received from himself the assurance that he believes as firmly as ever in the efficacy of his treatment.

Alvarez, of Hawaii, is experimenting with the cultures of the bacillus prodigiosus in bouillon, at the experimental hospital, Honolulu. He hopes to find a cure for leprosy. He agrees with me in this, that up to this date no cure has been found for it. Leprosy terminates in death. The only means of eradicating the disease is to isolate the sick, in order to preserve the well.

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From *The Sun* (N. Y.), July 21, 1896.

## LEPROSY.

*There are only three treatments, and they are of no value.*

TO THE EDITOR:

Sir—The resignation of Drs. Dyer and Scherck from the leper home of Louisiana, will not stop the experimentations for a possible cure of leprosy in those parts. Col. G. M. Bowie, of White Castle, is resolved upon having every cure reported from any part of the world, tried in that same hospital. In a recent communication to me, he says that the greatest difficulty he ever found in his way was the creation of the doctor in charge—his obstinate prejudice; he was “unable to secure for those people a trial in their behalf,” so he says himself. The doctor in charge declares leprosy incurable, and is not to be moved from that position. But Col. Bowie says he is determined that a fair trial shall be made.

Not alone Dr. Dyer, but every one who knows anything about leprosy, rejects Dr. Bouffé’s claims that he has discovered the leper bacillus in human blood. This disposes absolutely of the “Bouffé serum” treatment.

There are but three treatments to-day on which leprolo-

gists found their hopes, if they have any—the euophen treatment of Goldschmidt; the Carrasquilla treatment, of Colombia, South America; and the Kitasato serum “cure” of Japan.

Goldschmidt, last December, reported a case cured by the five per cent. euophen in oil, in the islands of Madeira. But as his report was made only five years after the alleged cure, no leprologist accepts it as authentic. Alvarez, the bacteriologist of the Hawaiian Board of Health, tells me that he has used it in the Sandwich Islands without success.

The Carrasquilla serum treatment was tried by Dr. Carlos E. Putnam, a pupil of Carrasquilla, in the Agua de Dios leper hospital of Colombia, on forty lepers, without success. Dr. Putnam took blood from the arm of a sixteen-year-old tubercular leper in an aseptic bladder, let it remain there until it had settled, then drew the supernatant serum by syringe through the wall of the bladder, and inoculated the serum into two asses and three she goats. His object was, as he wrote me, to increase, if possible, the natural immunity of animals, by the immunity which a leper might be supposed to have acquired in a degree proportionate to the age of the disease. I say might be supposed; but such an immunity, in any degree, is but an hypothesis.

After several days blood was drawn from these animals, and forty lepers of different types and grades of disease were inoculated with the serum. This was done November first, of last year. As yet, no result has appeared.

This treatment was first proposed in the Polyclinic, of Bogota, July 1, 1895, by Dr. Juan de Dios Carrasquilla. It is built upon the theory that the leper bacillus can be cultivated in the blood-current of an animal. No cultivation of the leper bacillus has ever been made in any other medium but the human tissue. The leper bacillus has never been found in human blood. Thousands of animals of all kinds—quadrupeds, birds, fish, etc.—have been inoculated, and no result was obtained. I, myself, a believer in the intermediary host-function of the fish theory, inoculated fish with the leper bacillus, but without success. Even human beings have been objects of this experimentation. In these cases, when leprosy followed, only after many years, it was, of course, impossible to say that it was due to the operation or to the development of the previously existing germ. So much for the Carrasquilla theory, which, as you see, was built upon the possible cultivation of the germ in the animal blood.

Dr. Putnam's theory is founded on the possibility of in-

creasing the natural immunity of the animal by inoculating it with the probable acquired immunity of the leper.

The two theories are essentially different, although the application is the same for both.

Dr. Jules Goldschmidt, who spent twenty-six years on the island of Madeira, in charge of Portuguese lepers, writes: "The Carrasquilla serum, or any treatment by serum in leprosy is, according to my experience, perfectly inadmissible. Till nowadays—and there is not the slightest proof of the contrary—the Hansen bacillus has never been cultivated, and animals are quite 'refractaires.' How on earth can it be possible under such conditions to obtain 'a serum'? You remember what I said about 'leprine' in my book 'La Lèpre'? But this 'leprine' is not to be compared to the 'tuberculine,' and has no affinity with a serum. There must be some fundamental misunderstanding regarding 'leprosy serum.'"

Dr. Havelburg, the bacteriologist of the Hospital dos Lazaros, Rio de Janeiro, says in a letter to me of date May 26, last: "Regarding serum therapy, I am thoroughly skeptical. In regard to leprosy, we hardly could talk of such as long as the culture of the lepra bacillus has not been made. Those experiments in Colombia, South America, appear to me to be very naïve. I neither believe in nor trust them."

As to the Kitasato serum cure, it is not original, being simply based upon Behring's idea of the antitoxine diphtheria serum. No advance has been made, nor is likely to be.

Dr. Goto's "Japanese treatment," which consisted of systems of baths, and tonic and eliminative treatment, has had a fair trial in Hawaii and has failed. Dr. Goto had been taken from Japan by the Hawaiian government and given full opportunity to apply his methods.

The anti-venom "treatment of Calmette and Fraser" was never tried, but a treatment almost identical has been known in Japan for a thousand years. It consists in dissolving the snake *mamushi* in wine, and using the dissolution internally. No favorable results were ever recorded.

Dr. Carreau, of Guadeloupe, noting that a leper's skin became smoother after being bitten by a viper, which eventually killed the man, thought that by using a remedy that would act in the same way as the viper poison, that is, by increasing considerably the amount of hemoglobin in the blood, grand results might be obtained. He used the chlorate of potassa, a drug which has such an effect, but this also was unsuccessful.

These are the only remedies upon which, in late days, the hopes of leprologists were built.

We are thrown back, even now, on the old India treatment, the chaulmoogra oil, which is our mainstay in the treatment of leprosy. It does not cure, because the disease is incurable.

ALBERT S. ASHMEAD, M. D.

*New York, July 19.*

To obtain a cure for leprosy—that is, if the bacillus is the cause of the disease—the following points must be kept in view :

1. The leper bacillus prefers immobile places to colonize, back of hands, arms, etc.

2. It prefers places exposed to light or oxygen; not the hairy or covered parts of the body. This may be the reason why it cannot be inoculated in animals which are hairy or feathered.

3. Subcutaneous injections are necessary to carry the remedy through the lymph spaces which the bacilli prefer.

However, it is by no means proved that the bacillus is the cause of the disease, and that therefore its removal would be tantamount to cure. In anæsthetic leprosy, many observers assure us that they never found the microbe, and these are the cases which are most frequently reported “cured.”

Prof. De Candolle, of Geneva, in his investigations on the sleep of seeds, mentions seeds which have sprouted after having been apparently dead for fifteen hundred years. He made experiments on seeds which he exposed one hundred and eighteen days to forty degrees below zero, Fahrenheit; they germinated. He concludes “that the protoplasm or the principle of life, in a resting seed, is in a state of inaction not comparable to that of a smoldering fire, but rather like that of a chemical mixture, which is capable of forming a combination whenever the required conditions of temperature and illumination are present.”

In the development or culture of the lepra bacillus, we may say that the following are necessary factors: light, oxy-

gen, heat (that is, the temperature of the human body, 98.6 F.). Whatever remedy will deprive the bacillus of these desiderata, will very probably destroy it or render it inactive.

Light can easily be abstracted ; perhaps carbonic acid gas or some carbonate injected might counteract the oxygen. The heat might at least be made subnormal. Even an increase of heat may produce salutary results. Dr. Impey claims that an attack of erysipelas acts in this way. This may be due to the increased temperature, caused by erysipelas, and not to the antagonism of germs.

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### CONDITIONS, HABITS AND CUSTOMS PREDIS- POSING TO LEPROSY.

Leloir has observed the life and manners of the lepers of Norway. The peasants of that country are unspeakably dirty. Most of them never take a bath ; and only once a week wash their face and hands, their feet once a year, their body remains untouched by water from birth till death. Their clothes are generally of wool, and they never take them off in going to sleep ; they are never washed, and these same clothes, as long as they are not absolutely rotten, are transmitted from generation to generation. Norway is the "classical land of leprosy."

The Icelandic habitation is a sod-hut of green turf, built upon the bare ground. Each hut consists of one room. Four or five huts are crammed closely together. The inside drips moisture in big drops, for the sod absorbs the dampness like a sponge. The clothes can never be dry in the interior of these houses. Fresh air is always absent. With the poor, the whole family, parents, children, sleep in the same room. Fourteen persons may be found sleeping in a room, whose temperature reminds of the tepidarium of a Roman bath. The air is stinking. There are the smells of the mouldy hay, of the sheep skin quilts that are never dried or aired, of the dirt



which is dragged in on the clumsy Icelandic skin-shoes. In this dirt, a mixture of children, cats and dogs, lie reeking on the floor, exchanging caresses and *echinococci*, etc. (Ehlers). Iceland is a leper country.

Leprosy is admitted to be inoculable. Insect countries are greatly predisposed to leprosy. The malarial districts of Japan are especially predisposed to inoculation of that kind. At the time when the rice fields are flooded, insect life is exceedingly developed. The insects biting the sick transmit the germ to the well.

Dr. Garces, of Colombia, relates the following: "A young lady of the Department of Santander, traveling with her parents, slept one night at an inn, in the same bed in which some nights before a leper had slept. The bed-bugs pricked the young lady that night, and all the prickings were converted in a short time into lepromas, and leprous ulcers. The young lady was seriously ill, and died in less than a year, with all the symptoms of leprosy perfectly characterized."

Eating of raw fish in Japan, especially the carp, which feeds on the larvæ of mosquitoes, in my opinion is a means of transmission.

To what can the very rapid increase of the number of lepers in Colombia, in the last forty years, from 400 to 27,000, be due if not to the exceeding abundance of insects?

As long as there was but one centre of leprosy in Colombia (Carthagena), the increase was not so rapid.

According to Muniz, the most ancient focus of leprosy in Colombia was Carthagena. As it was the oldest place which had a comparatively great population, it must have been the original seat of leprosy in Colombia, and could have been only inoculated by Spaniards or negroes. From that centre, by the dispersion of the population, all the other centres of leprosy were created. Now it happens that these centres are always in localities where the climate is very moist, and consequently the insect life abundant.

In Japan insect life has propagated the germ of leprosy in spite of their burial laws which might have extinguished

the germ, and in spite of many other precautions related in this paper, because of the abundance of insect life from their rice fields. The rice districts of Japan are those most affected with leprosy; they are always coast districts. In those places insect life is most abundant. No other reason but inoculation by insects can explain the continuous inoculation of the lepra germ in a country where a man takes a hot bath once or twice a day, and where all the lepers have always been isolated in colonies. In every province of Japan, and this country is populated mainly along the coast line, there is not one colony or focus of leprosy, but many. By diminishing the number of these colonies, or making them all in one, we can diminish the chances of the propagation of the disease. What Japan needs to eradicate leprosy is the formation of one far-distant leper colony, on one of her many islands, afar from the great centres of population. Let the outcast villages which line the roads of Japan be abolished. The proximity of these infected villages to the well population of the large centres, is a constant source of contagion by insect life.

If the infected persons were removed to a point whither insects could not carry the germs, a source of propagation of the disease would be removed. The insect rarely goes far from its birth-place. It could never carry contagion to a great distance. Prof. L. O. Howard, Entomologist, U. S. Agricultural Department, Washington, tells me: "In my opinion mosquitoes and flies are not apt to wander far from their birth-place. In the case of mosquitoes breeding in waste places, especially near the sea-shore, there is always the chance that they may be blown to very considerable distances during high winds, although certain observers have stated that they cling successfully to plants during high winds, and evidently try to avoid such enforced migration. If the place of birth continues to be a fit place for breeding, and if there is attractive food for the adult in the immediate vicinity, neither mosquitoes nor flies, in my opinion, will migrate to any distance."



CIRCULAR NO. 13, SECOND SERIES.

## UNITED STATES DEPARTMENT OF AGRICULTURE

## DIVISION OF ENTOMOLOGY.

## MOSQUITOES.

We are accustomed to think of but a single species of mosquito, and of this as occurring in most parts of the country, but as a matter of fact, Osten Sacken's Catalogue of the Diptera records twenty-one species from North America, and Mr. F. W. Urich states that he has observed at least ten species in Trinidad. Twenty species are contained in the collection of the U. S. National Museum.

The following statement concerning the life history of these insects is based upon a series of observations made in this division upon the development of two summer generations of *Culex pungens*, one of our commonest and most wide-spread species. The writer has seen specimens of this insect from New Hampshire, Massachusetts, New York, Maryland, District of Columbia, Illinois, Minnesota, Kentucky, Nebraska, Louisiana, Georgia, and the island of Jamaica, West Indies. No doubt it is also abundant in New Jersey.

Egg laying takes place at night. The eggs are deposited in boat-shaped masses on the surface of the water, the number varying from two hundred to four hundred in each mass. The eggs may hatch in sixteen hours. The larvæ live beneath the surface of the water, coming to the top at frequent intervals to breathe. The larval state may be completed in seven days; the pupal state may last only twenty-four hours. An entire generation in summer time, then, may be completed in ten days. This length of time, however, may be almost indefinitely enlarged if the weather be cool. There are, therefore, many generations in the course of a season, and the insect may breed successfully in a more or less transient surface pool of water.

Mosquitoes hibernate in the adult condition in cellars and outhouses, and under all sorts of shelter. The degree of cold makes no difference in successful hibernation; mosquitoes are abundant in the arctic regions.

The most satisfactory means of fighting mosquitoes are those which are directed to the destruction of the larvæ or the abolition of breeding places. These measures are not everywhere feasible, but in many places there is absolutely no

necessity for the endurance of the mosquito plague. The principal remedies of this class are three: the draining of ponds and marshes, the introduction of fish into fishless pools, and the use of kerosene on the surface of the water.

The draining of breeding pools needs no discussion. Obviously the drying up of such places will prevent mosquitoes from breeding therein, and the conditions of a successful application of this measure will, it is equally obvious, vary with each case.

The introduction of fish into fishless ponds is feasible and advisable in many cases where the use of kerosene on the surface of the water would be thought undesirable. In tanks supplying drinking water, for example, fish would destroy the mosquito larvæ as fast as hatched. A case is recorded in *Insect Life* (vol. iv, p. 223), where carp were employed in this way with perfect success by an English gentleman living in the Riviera. At San Diego, Texas, the people use for this purpose a little fish, called there a perch, the species of which the writer has not been able to ascertain. Probably the common voracious little stickle-back would answer admirably as a mosquito destroyer.

Probably the best, and certainly the easiest, of wholesale remedies against mosquitoes is the application of kerosene to the surface of breeding pools. The suggestion that kerosene could be used as a remedy for mosquitoes is not new, and has been made more than once. Exact experiments out of doors, and on a large scale, were made in 1892 by the writer. These and subsequent experiments show that approximately one ounce of kerosene to each fifteen square feet of water surface on small pools will effectually destroy all the larvæ and pupæ in that pool, with the additional advantage that the adult females, not deterred from attempting to oviposit, are killed when they alight on the kerosene-covered water. Ordinarily the application need not be renewed for a month, though varying circumstances may require more frequent applications in certain cases.

Since 1892 several demonstrations, on large and small scales, have been made of the practicability of this method. Under the writer's supervision two localities were rid of mosquitoes by the use of kerosene alone. It will, however, probably not prove feasible to treat in this way the large sea marshes along the coast where mosquitoes breed in hordes,

although even here the remedy may prove to be practicable under certain conditions and in certain situations.

L. O. HOWARD, *Entomologist*.

In leper countries all intelligent persons should unite to prevent by persuasion, and all legal means, the consumption of raw fish. Pools and water-ways in the vicinity of leper villages or lazarettos ought to be kept free from mosquitoes by kerosene.

### HORRORS OF LEPROSY.

Ricardo Parra, a Colombian physician, who himself became a leper, has given the most graphic description of the pains and horrors of this disease (Colombia is the most ancient seat of leprosy in America): . . . "In some, the muscles have become pale, weak, and are slowly destroyed; in those who follow, the articulations are scooped and excavated; in another, the articulation of a foot is detaching itself; in the next, the hand is already detached. . . . One, entirely shorn of muscles and arms, has nothing left but a putrid trunk, and these wretches, just as they are, feed with voracity, digest well, rave and blaspheme, and, burning with lascivious fury, get libidiously drunk, and revel in shameful dreams and filthy fancies. . . . Look, finally, at that hundred of monstrous beings mixed up together, piled up one on top of the other, and wallowing in the dust. Many have no noses, nor lips, nor ears, nor hair; where the face used to be you see now three or four holes. . . . The cheek bones have fallen, and they can no longer croak; their noses are stopped, and they can no longer breath through them; larynx, pharynx, esophagus, have been devoured, and they cannot swallow; some are mad with hunger, others devoured by unquenchable thirst. Here are some in whom the raucous roar of the lion has turned to Catilinarian voice and perfect aphonia. In another subject, the lungs, charged with purulent foci, can hardly ex-

pand, and here is another whose heart has almost stopped beating. Some weep, others curse, others blaspheme, others, pusillanimous and craven, tremble and cry for mercy at the least provocation; others laugh danger to scorn, and, careless of whatever may happen to them, die with stoical indifference. Unceasingly flowing tears, and a viscous glutinous humor keep their red and inflamed eyelids apart, so that many lie blind, or grope blindly in the darkness. Many of them have frightful dreams and awake roaring like lions, or howling like wolves. The urine of all these men is thick (jumentous) like that of the horse, or clear and raw, as if passed through a filthy filter; there are no sewers more mephitic than their defecations. Some of them lie motionless and entirely paralyzed, and as, at the same time, they can neither articulate nor swallow, they are dying of hunger and parched with thirst, not being able to ask for help. All secrete a fetid sanies over the whole body and breathe an air which they themselves have poisoned. . . . A horrible caries consumes all the articulations and causes the severance of the limbs, which fall off by pieces, the phalanges of the fingers are shaken off and the teeth break forth from their sockets. . . . Some of these trunks talk; demented, mad, they try to sing in their delirium, and their voice is now like the hissing of a snake, and now like the cavernous echo of a tomb. Look, now, at that horrible scene! Some of these trunks, formerly men, now masses of rotten flesh, are possessed by libido inexplibilis, and would like to indulge in pederasty and onanism with other not mutilated wretches, who, having fallen into the opposite depravity, feel a horror for the sex, and all that refers to it, but who, devoured by insatiable hunger, would like to eat their rotten arms."

No one who has not lived in a leper country can believe that such a description is not exaggerated. There are other than physical horrors. Try to imagine the mental torment of the victim, who has become an outcast, treated like an animal, hunted from town to town, with no place to lay his head except at the foot of a tree. When he dies on the road,

he is treated as a dog. In countries like Japan, there are drinking places which are known as leper pools. The merest infant is taught to shun those pools. On many places, along the road, you will find platters, plates with food thrown on the ground, as you would feed a dog, in order that the poor creatures may not come up to the houses. Now, suppose the victim of so much suffering, horror, wretchedness, contempt, to be a young, beautiful, rich, well bred young lady. And ask yourselves if the fancy of men can ever be capable to represent such an image of woe !

Dr. Garces, of Colombia, South America, relates such a case: " A young lady, fourteen or fifteen years old, the flower of the family—the mirror, in which the father and brothers see themselves, the joy of the world, an image of candor and innocence—coming back from a visit, changes imprudently her attire, and catches cold, to use the common expression. She soon is covered with wheals, feels her limbs grow heavy, her ears itch, and soon begin to swell ; reddish or speckled spots invade her lovely face. And now old women's medicine galore ! Physicians also are consulted, the recommended climates are visited, and, in spite of all that, the spectre pursues his course ; he grasps his victim with both arms. Consternation spreads in the family, society avoids the victim, slander prepares its arrows, and a hell of horror and suffering succeeds to the gaiety and to the fond illusions of past times. And that is not all. The charming young lady who is sister of the victim, her interesting brother, are looked at askance ; the families shut their doors upon them. Nobody will have any relations with a house in which there is a leper. The servants flee, business is paralyzed, sadness and despair reign absolute until comes the moment of separation, if isolation is imposed. To depart, and to depart forever ! To become an outcast ! To drag out a life of privation, wounded to the very depth of the soul ; having no consolation but God ; no hope but eternity ; exhausted by physical sufferings and tortured by the remembrance of those who were her own, and

to whom she leaves a stigma of malediction. It is horrible !  
It is heartrending !”



**MELANCHOLIA OF LEPROSY.**

Dr. Ehlers allows me to use this photograph. I think it represents with great truth the melancholy of the leper.



## NECESSITY OF ABSOLUTE ISOLATION.

The custom exists in Iceland of kissing all the persons present on entering a room. Dr. Ehlers has seen lepers thus kissed by well people. On account of this custom he is opposed to the isolation of lepers in their homes.

He believes leprosy to be an infectious disease. He quotes instances like the following: Father and mother both lepers; father leprous; son infected when four years of age by a leprous father; five sisters and brothers in a family, lepers, because they did not break off their connection with a leprous member of the family, while all the members who broke the connection remained clean; husband, two years after the death of his leper wife, became a leper; four patients whose mother was a leper; leprous brothers and sisters, with father and mother clean, contaminated through other brothers and sisters; a man, three or four years after sleeping with a leper for three months, became a leper; a woman living on a farm frequently visited by lepers, became a leper; a woman nursing her leprous sister until her twenty-sixth year, became a leper; a man lodging a leprous pauper for a year on his farm, became a leper; eleven persons became lepers, whose remote common relation was a leper; a woman whose man-servant for a year was a leper, became a leper; maid-servant for a year in a house where there lived a leprous person, became a leper; a child who shared the bed of a leper for a year and a half, became a leper. He cites other instances, but these will suffice.

I quote the following pages from the last report of the President of the Board of Health, Honolulu, 1896:

"It seems to me, since the absolute removal of leprosy from among us has been, and is still, the object of all the effort put forth by this government, more rigid measures should be used in seeking out the sources of infection, viz., individuals affected with leprosy. So long as these remain, either as old cases hidden away, or newly developed or developing ones

not yet recognized by the laity, we must have extension, and that indefinitely. New germs are located in new soil by the victim just sent off; and while we diminish the spread of the disease, we cannot absolutely prevent it.

"Considering the nature of the malady and its almost mysterious methods of propagation, we must look upon every individual affected with it, no matter at what stage of development, as a menace to the community and the nation. Hence it would seem wise to locate every person who shows any suspicion of the disease, by a systematic, persistent and thorough examination of all persons liable to develop leprosy. After all that has been said and done, it does certainly seem worth our while to use every means to stamp out the disease, even if the methods are somewhat arbitrary and displeasing to the masses. As it is, each physician does his best, in his district, to discover whatever lepers may be there, and as each case is brought to light, accidentally or through some native, the physician sends it off; in the meantime begins the process *de novo* of the seeds left behind, and this process is continued as long as chance favors, perhaps until several new individuals are infected. There are probably in each district several lepers living among friends and doing their part toward perpetuating leprosy. Last week I sent a leper to you. She has been living four years, at least, among her people, and in the intimate way common to the race. Before she became a leper, she lived with lepers, and they went to Molokai, but not until seed of the disease had been sown. Now I believe that if we have a right to segregate lepers, we have an equal right to search for them where they may be found, and no justifiable opposition can be raised. I say that every man, woman and child living in conditions where leprosy obtains, should be thoroughly examined every six or twelve months by a man familiar with the clinical evidences of leprosy. None could escape detection, except a few wonderfully isolated by barriers of nature." (Dr. E. S. Goodhue, government physician, Koloa District, Hawaii.)

"At the present date the bulk of the cases segregated are mild, whereas ten years ago severe cases comprised the bulk. If segregation had been as effective then as it is now, the leper population would have been near two thousand. Ten years ago mild cases were left at large in the population, and were an unknown quantity, whereas to-day the most rigid segregation can only produce mild cases; severe cases are to be found but rarely at the present day. The first twenty years of vacil-



lating segregation produced 3,076 lepers. The last nine years of more active segregation has gathered up 1,932." (Dr. A. Mouritz, government physician, Molokai.)

"I think there should be rigid laws in reference to the disposition of the effects of apprehended lepers. A native has no scruples against wearing the cast-off clothing of his exiled brother, or sleeping in his unclean bed. If there were regulations, unmistakable even to the smallest details, printed and sent to the proper officials, it would certainly assist in preventing the spread of this disease." (Dr. E. V. Le Blond, government physician, Puna District, Hawaii.)

"There are many things which could be done that would go far towards lessening the chances of contagion. In almost all cases where lepers are sent away from Kona, their effects, such as mats, clothing, etc., are given to grieving friends and relatives left behind. These, of course, are great sources of contagion." (Dr. H. A. Lindley, government physician, Kona, Hawaii.)

There are some men who oppose compulsory isolation of lepers with incomprehensible energy. Dr. Jonathan Hutchinson, of London, has been engaged in vigorously opposing the proposal to legislate for isolation in India, and the acts for that proposal in Parliament had to be withdrawn. Sir James Paget, Sir Joseph Fayrer and he, took, as Dr. Hutchinson says, the chief part in this, "to the annoyance and disappointment of some non-professional advocates." I publish here a photograph of a Hindu leper (British India), who, as a rice seller, has his leprous foot in his rice. Is it necessary to be a professional to understand that such a thing ought to be prevented by law, by all possible legal means?



ANÆSTHETIC LEPROSY WITH LEUCODERMA.

I publish also the photograph of a British Hindu leper, whose mutilated extremities make of him an object of charitable care for the rest of his days. He does not look like a human, but rather like a hounded wild beast, and he may be, in his innocent misery, as dangerous as a wild beast, and much more. But no compulsory precaution ought to be taken against him, according to my distinguished colleagues, Dr. Hutchinson and Sir James Paget.



BRITISH HINDU LEPER.

Here is another British Hindu, a woman whose leprous legs will soon be amputated by the relentless action of nature. Shall she also be allowed to mix with her kind? Think that she is young, and will probably bear offspring; her children will, without doubt, be inoculated with her own horrible disease, and be the heirs of her sufferings.



BRITISH HINDU LEPER.

The next British Hindu is also a woman; her sightless eyes, and mutilated fingers, are the work of leprosy. Should not she also be isolated?



BRITISH HINDU LEPER.

The next cut shows two lepers crouching, whose noses are about to fall in, gnawed away by leprosy. In another year their aspect will be immensely more loathsome than it is now. As outcasts they will be driven from place to place, like mangy dogs, and the contagion will be carried along with them, from place to place.



**BRITISH HINDU LEPERS.**

Here is a cut of five mutilated lepers, without fingers and toes, living in the woods. Let us suppose that they always do so—that is, live all their life like beasts of the wood—there will be no danger of contagion. But ought not the rest of mankind, whom their good luck has exempted from the awful calamity, take care of them, and find a place where they may, with others of their kind, live in peace, in some small comfort, with as much happiness (which will be exceedingly little anyhow), as their bodily condition allows? In India, where Christian charity does not help them, and where the public



native feeling is, that the sooner people thus stricken, perish, the better it is, these people can find no relief but from the power that will isolate them. On the other hand, they will certainly, left alone, come into contact frequently enough with their fellow-men, to increase the empire of leprosy sevenfold—that is, from five to thirty-five—in forty years, as has happened in Colombia.



GROUP OF HINDU LEPEERS.

Here is a letter from one of the most experienced leper physicians of our days :

“ MAPULEHU, MOLOKAI, January 1, 1897.

“ *Dear Doctor*—I have received your circular relating to the proposed congress of leprologists and delegates to discuss “ The best ways and means for the suppression and prevention of leprosy,” and I think your statements very rational and convincing. You have my support. One of the best fields for observing the grasp that leprosy has on mankind, and the penalty the human race is paying for its apathy in dealing with the disease, can be seen in this island. Year in and year out the lepers at the settlement average between eleven and twelve hundred, chiefly Hawaiians, but within the past year or two

the disease is making amongst the foreigners here (white people) considerable inroads. Now, Doctor, I do not know whether you have ever visited these islands; if so, you must have learned that segregation is the professed policy of the government in dealing with the disease. Yet for years the law was at the caprice of the politicians. To-day we are reaping the benefits.

"Segregation is better carried out to-day, but it is far from thorough. The condition of leprosy and our knowledge of its etiology to-day is what it was in 1867. In the words of the late Indian Commission (so utterly unscientific), 'Leprosy spreads by ways and means unknown. (!) But it is non-contagious.' (?)

"Very respectfully,

"A. MOURITZ, *Physician.*"

Dr. Havelburg says: "I should like to draw your attention to a prophylactic view. I have repeatedly observed, during my stay in Brazil, the ease with which lepers travel to Europe. What happens in Brazil, may well happen from other leper countries, considering the great traffic by water that is going on in our days. The leper, as a cabin passenger, is very disagreeable to other passengers, and may eventually become more; but his being in the steerage means a danger, especially if the voyage be of some length. . . . You see lepers on the streets of Rio Janeiro. I have met lepers in the best and most frequented coffee houses, in restaurants, and in an elegant hotel. I have seen a leper street car conductor, and a leprous puella publica, move in perfect freedom. The manifold private efforts of our hospital administration to keep in bounds, as much as possible, the spread of leprosy, have not had much success, up to this time. An appeal to the public is futile, as the peculiar ideas of personal freedom and of family relations are opposed to the humane confinement of the lepers in a hospital, as invincible difficulties.

The action of the New York County Medical Society, in passing unanimously the report of its committee, against the segregation of the lepers in New York city, is something astounding. There are only three individuals isolated at North Brother Island, but the number of lepers, foreigners, coming



and going, according to competent authority, amounts to about one hundred. These are loose on the streets of New York, with or without the knowledge of the competent authorities.

The report says that the disease is probably infectious. Well, is not that enough to show the necessity of isolation?

No one doubts that leprosy is inoculable; it must be, if it is a bacillary disease.

Dr. Petersen, professor of Dermatology and Syphilology, University of St. Petersburg, Russia, is of opinion that (1), leprosy is a bacillary disease communicated by means of contact, though it is probable that for the further development of the bacilli a certain individual predisposition is necessary, as is the case with the micro-organisms, the cultivation of which will often only succeed upon certain means of nourishment; (2), since it is possible for leprosy to be communicated from man to man, we should erect colonies for the lepers, where isolation and the prevention of propagation can be secured.

Dr. Petersen, as president of the commission appointed by the Russian government, to inquire into the condition, and to devise the best measures for the treatment of the patients, is about to report to his government in the sense above noted.

Dr. Dehio, professor of Dermatology and Syphilology, University of Dorpat, says that the discovery of the bacillus has now convinced medical men that the disease is contagious, and that by actual contact, not through the air, water or food. The predisposing causes are poverty, misery and dirt. He then quotes numerous cases which prove contagion. He says the incubation period of the disease is generally from two to three years, but has been known to last from ten to fifteen years, which accounts for contagion being so seldom detected.

Dr. Bergmann, lecturer on Dermatology and Syphilis, Riga, Russia, believes that leprosy is spread by contagion only.

Dr. Reissner, of the Riga Leper Asylum, is of the same opinion.

Professor P. G. Unna even goes so far as to oppose the discharge of anæsthetic cases—that is, of such as show no bacilli. He recommends the following scheme for the treatment of leprosy: 1. The establishment of hospitals in pleasant, but poorly populated regions, in woods, or on an island, with gardens, with a good medical staff for the worst cases. 2. A health resort nearer to town for the better cases—slightly nodular cases, anæsthetic cases, and those cases which have become ameliorated in hospitals. 3. The establishment of polyclinics, in the towns, for suspicious cases and the so called cured cases; all bad cases to be sent to 1 and 2.

Arning is a contagionist.

Munro, of St. Kitts, is the pioneer of the dogma of the necessity of compulsory isolation.

Patrick Manson says that leprosy is contagious, but that the disease, introduced into the system, will only grow in persons susceptible to it.

Professor Sousa Martens, of Lisbon, says that in his opinion “the increase of the disease in Portugal is probably due to the fact that the law enforcing segregation is obsolete.” He believes the disease to be contagious.

Dr. Panixo Munox, of the Seville Leper Asylum, believes that leprosy is contagious.

Dr. Roberto Campana, of Rome, believes also in contagion.

Dr. Rogers Pasha, Director General of hospitals, Cairo, Egypt, and health officer there, says that leprosy is considered a contagious disease. There are two thousand lepers in Egypt.

Dr. Engle Bey says that although he does not believe that the leper bacillus is the cause of the disease, he is convinced that leprosy is contagious.

Goldschmidt is a pronounced contagionist, although he thinks that misery and dirt do the work generally credited to the bacillus.

Professor Smirnhoff, of the University of Helsingfors, Finland, is a contagionist.

Professor Saltzman, the Director General of Medicine in Finland, does not want the lepers to be treated in the same wards as other patients; he thinks they are more dangerous than syphilitics.

Sederholm, the highest authority on leprosy in Sweden, believes that even anæsthetic lepers may spread the contagion in the first stages. He says that leprosy has diminished in Sweden only in those districts where hospitals have been built.

Hansen and all his assistants believe that leprosy is contagious. So do Kaurin, of the Reknas Leper Asylum, Molde, Norway; Holmboe, Chief Medical Officer of Norway; Prof. Bœck, of Christiania; Dr. Sand, of the Trondhjem Leper Asylum; and Borthen, the leper eye specialist of Norway.

Impey, of Cape Town, South Africa, is a confirmed isolationist. So are all the Sandwich Island physicians.

Carrasquilla, of Colombia, South America, declares that the increase of leper cases in Colombia, from 400 to 27,000 in forty years, is due to contagion and non-isolation.

Robelin, of Cuba, has published a pamphlet with the title, *Is Leprosy Contagious or Is It Not?*\* He concludes that it is contagious. I find in this pamphlet the following passage, which, by way of winding up my tale, I shall quote in its entirety.

"The following conclusions are taken from the last and quite recent study of Neisser (Histologische und Bacteriologische Lepra-untersuchungen):

1. The lepra bacillus is the cause of all leprosy affections; every time, when its mode of propagation is unknown.
2. All the observations concerning heredity or family disease, are rightly interpreted as cases of infection in the family.
3. The possibility of direct contagion is undoubtful from the moment when the bacilli of the diseased individual reach the surface of the body (cutaneous ulcers, etc.). However, the danger and the probability of infection is very slight, as the introduction of the bacillus into a healthy man meets many

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\*"Es O No Contagiosa La Lepra?" por el Dr. Enrique Robelin, *Cronica Medico-Quirurgica*, Habana, 1887.

difficulties. The latter may be connected with certain individual conditions (absence of predisposition), or with the properties of the bacillus itself, necessity of a development tranquil and (*sin trastorno*) without disturbance of the infected point, etc.

4. The existence of spore, or better, of stable forms, permits to admit the contagious nature of leprosy. This contagion may be direct from individual to individual; it may be indirect, for instance, by means of deposits of infectious matters in the ground (corpses), or of an accidental contact through aliments, drinking water, etc.

The multiplication of the bacillus outside of the human organism is so far little likely. The attempt at cultivation shows that animal heat is necessary for the development of the bacilli. So far man is the principal agent of the leprous virus, and there is no reason for protesting in the name of humanity against the isolation of lepers.

5. The individuals who come in close contact with lepers, as by marriage, etc., do not become lepers.

The contrary is proved, as we have seen. Even supposing this to be the case, would it prove that leprosy is not contagious? What should we then say of tuberculosis? Marital tuberculosis is exceedingly rare, as Leubet (of Rouen) demonstrated in 1884. Will it be said that tuberculosis is not contagious? We shall not insist. Consequences must be wrong if founded on wrong premises.

6. Individuals in contact with lepers, as physicians, sisters of mercy, assistants, etc., do not contract leprosy.

This is a very hackneyed and little serious argument; it would be time to drop it forever. Absence of contagion in hospital is a negative argument, as has been shown by Danielssen himself. The same might be said of tuberculosis. In a number of diseases the same thing happens. How many physicians, assistants, etc., attend syphilitics, tinoses, and tuberculous patients, without contracting these affections? Are they less contagious on that account? Leubet himself has shown in the Academy of Sciences, in Paris, that the transmission of tuberculosis in hospitals is very rare. Would it be reasonable to conclude that tuberculosis is not contagious? Such arguments ought to have no place in modern studies. What we have just said is founded on good logics. Besides, we can quote cases where assistants of lepers have been infected. Read the works of Schilling, Landré, the cases of

Macnamara, Hildebrand, Robertson, Livingstone, Carter, Pasquier.

Dr. Robertson quotes a case (*Lancet*, 1867). Dr. Vidal published the case of a Brazilian physician, who, attending a patient, became a leper. Why should we quote more facts? What has been said covers the case.

7. The lepers residing in places exempt of lepra, do not transmit the disease to those within their scope. This is absolutely unacceptable. What happened in the United States? The American dermatologists say that imported leprosy is not confined to the individuals, but is transmitted to healthy Americans, and sons of healthy individuals. It is often said that the sixty or one hundred lepers who live in Paris do not propagate the disease. To this we answer that the incubation of leprosy extends over a large period, and to judge with certainty we ought to wait a long time. Erasmus Wilson, who considered the importation of lepers into London as very dangerous, said that it was necessary to wait. But why should we quote only European localities? Is it not proved that leprosy did not exist in America before it was imported? It is proved that such countries as have had no intercourse with lepers, have not acquired the disease. To all these reasons is added a modern and absolute proof, the epidemic of the Sandwich Islands. This fact alone, in the absence of all others, would be more than sufficient to prove the contagion of leprosy."

The following letter has been spread to the medical press:

*To the Editor*—Will you kindly state in your paper that I am considering the propriety of starting a Carrasquilla Institute, in New York city.

I have received from Dr. Carrasquilla, of Bogota, Colombia, six consignments of anti-leprous serum, seventy-two bottles in all. Further consignments will be forthcoming at short intervals. Of the above consignments I have sent a portion respectively to Dr. Hansen, of Norway, to Dr. O. Petersen, Inspector General of Leprosy of St. Petersburg, and to the President of the Hawaiian Board of Health, Honolulu. These gentlemen will experiment with the serum and make a report of results obtained at the first leprosy congress, to be held in Berlin in October, 1897. Carrasquilla, in his latest letter to me, dated December 13, 1896, says:

"The efficacy of the anti-leprous serum, tried for one year on a large number of patients, leaves no doubt as you will find out yourself. The process gives all kinds of securities, which makes me hope that you will recommend it to the attention of others and persuade them to study it."

The above named countries, Norway, Russia, and the Sandwich Islands, have had the following experiences with leprosy. In Norway, in 1856, there were 2,877 lepers; from that time to 1891 there were 4,758 additional cases, in all 7,635. In 1885 the mixed isolation law—that is, isolation in hospitals and in families—was passed. Under that law leprosy has decreased to 800 cases, which is the present number. Is it any wonder that the physicians of Norway believe in contagion?

In Russia, whose population is 124,000,000, during the period in which it was generally believed that the disease was not contagious, the leper hospitals were closed. Leprosy increased apace. In 1879 Prof. Münch of Kiev and Prof. Petersen began to study the disease, and reached the conclusion that climate, situation and food have nothing to do with its spread. In 1894 a commission, having been appointed by the Government to study the question of leprosy, reported that they had come to the conclusion that leprosy is contagious; they consequently advised the segregation of all lepers. According to Dr. Petersen there are 5000 lepers in European Russia.

In the Sandwich Islands leprosy was imported in 1848 or 1849, as some say. Before 1848, at any rate, the disease was very rare or else it worked unknown to the inhabitants. Hildebrand, in 1853, was the first to report a case of leprosy. In 1861 there were six lepers in the neighborhood of this original case. From that time the disease spread in an unheard-of manner. In 1865 there were 230 lepers in a population of 45,000. In 1881 and 1882 there were 4,000 lepers. Thus in thirty five years, one-twelfth of the population had become lepers. "Et nunc erudimini," says Dr. Robelin, from whose work, "Es O No Contagiosa La Lepra?" (Is leprosy contagious or not?) I quote these figures as to Hawaii. Strict isolation laws came at last in 1865. To-day there are only 1,250 lepers.

While the New York County Medical Society had these facts before it, or could or ought to have had them before it, it has approved a report of its committee on leprosy composed of the Health Commissioner and several professors of der-



matology to the effect that leprosy is not a dangerous disease, and that isolation is not necessary.

In Colombia, while there was no isolation, leprosy increased in forty years from 400 to 27,000 cases. The Government now is very much alive to the situation. The church has raised \$200,000 for a national lazaretto. It is believed there, generally, that the solution of the question is either the Carrasquilla serum cure, if it shall prove effective, or absolute isolation. And the question is taken very fearfully to heart: they cannot afford there to declare jauntily that leprosy is not dangerous. The lepers are at the present time crowding Bogota to receive the possible benefits of Carrasquilla's treatment. Their crowding there has become a real nuisance.

According to the report of the Health Commissioner of New York, there is no danger of the spread of leprosy in New York's climate. Therefore, this is the place for starting a Carrasquilla institute for the treatment of the lepers in the United States. The different States of Minnesota, Wisconsin, Louisiana, &c., will be very glad to unload their leper populations into this favorable climate, if a chance of cure by Carrasquilla's serum is offered to them here.

I should be disposed to inoculate any patient who shall be sent to me by the State Boards of Health, free of charge.

As soon as the bars are down and the three lepers of North Brother Island are discharged by our Health Commissioner, when every pretence of isolation shall have been given up, and leprosy officially recognized as not being dangerous, no one can have any objection to the coming to New York of all the lepers of this country.

ALBERT S. ASHMEAD, M. D.

I need scarcely say that I shall not start a Carrasquilla Institute, at least for the present, because I consider leprosy as *dangerous*, and do not want to accumulate causes of infection in New York. I only have offered this to give the board of health a chance to show whether really they believe that leprosy is not dangerous. It is said by this Health Commissioner "*that leprosy is probably infectious, but that it does not follow that it is necessarily contagious.*" Why, if it is infectious is not isolation recommended by infection as well as by contagion? What does it matter how you catch it, if you do catch it? The report says, "in some localities lepers go

abroad without let or hindrance." It is said that this happens "without detriment to the public health." How do they know about the want of detriment? These things happen in Colombia, where there are 27,000 lepers; in China, where there are 100,000 lepers; in India, where there are 200,000 lepers! Do these facts before us prove that the liberty of moving given to lepers in countries which number such horrible amounts, prove that the freedom of lepers is innocuous? The history of leprosy in the middle ages proves that isolation can do something. For how was the disease destroyed except by the pitiless isolation of the middle ages? We do not know whether leprosy was spread then by infection or contagion. Spread it was, through every *civilized* country of Europe!

The following letter was received by me from the consulting dermatologist of the New York Board of Health. I publish also my reply:

10 W. 35th STREET, NEW YORK, January 27, 1897.  
DR. ALBERT S. ASHMEAD,  
210 West 4th street, New York.

*Dear Sir*—From the statements made by you in the last Medical Record and the New York *Sun* of this morning, I infer that you have not carefully read the report of the Leprosy Committee of the New York County Society.

In the first place, the committee was charged with the duty of inquiring simply into the local conditions, without regard to leprosy elsewhere. This disease has been under the observation of the writer, in this city, for over thirty years, and two other members of the committee have had about the same experience. So far as known to us, no case of leprosy has ever developed in this city, or appeared in any persons except such as came from foreign parts. During the period mentioned, I have personally seen some forty or fifty cases, having some of them in my hospital wards for years, but no new cases have developed in consequence of them, so far as known to me.

Your writings would imply that the committee recommended that the lepers on North Brother's Island be turned loose on the community. The only allusion to this matter in the report, reads as follows:

"As to whether indigent lepers, dependent upon public charity, should be accorded the same privileges in general



institutions as are given to patients with other chronic infectious diseases, or should be assigned exclusively to an institution set apart for them, is a question of expediency which our municipal authorities must decide."

I trust that you will see the propriety of correcting the impression you have made.

As to the use of serum, the Honolulu Board of Health invited the writer, two years ago, to suggest methods of treatment to be tried in the leper hospital that they were about to establish in that city.\* In replying I advised, among other things, that they should prepare and test the efficacy of a leprous anti-toxin serum.

Yours truly,

H. G. PIFFARD.

210 W. 4th STREET, NEW YORK, January 28, 1897.  
DR. H. G. PIFFARD,  
New York.

*Dear Sir*—I have your letter of January 27th. I beg to observe that your thirty years experience in New York city, where you have treated forty or fifty cases of leprosy, without ever coming across an instance of contagion, is purely negative evidence, and, allow me to add, not very extensive at that. In my opinion, the positive evidence for contagion, or inoculation if you will, that mass of evidence which I have before me, and that which you will find in Ehler's Icelandic publications, is overwhelming.

You say that my writings "would imply that the committee recommended that the lepers on North Brother Island be turned loose on the community," and that "the only allusion to this matter contained in the report reads as follows: 'As to whether indigent lepers, dependent upon public charity, should be accorded the same privileges in general institutions as are given to patients with other chronic infectious diseases, or should be assigned exclusively to an institution set apart for them, is a question of expediency which our municipal authorities must decide.'"

Permit me to say that your quotation is not complete, and thereby misleading. These sentences precede it:

"In places where the disease spreads, segregation is wise; but to adopt segregation in all cases here would be unnecessary and unjustifiable. To do this would be tantamount to

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\* The same invitation was issued to a number of physicians, to Dr. Winslow Anderson, of San Francisco, to the author, and many others.—A. S. A.

giving leprosy a legal status as a dangerous, contagious disease, and would only add to the popular alarm about the disease, which is already excessive.

"Segregation would be unjust to the victims of the malady, and in many cases would hasten its progress."

This report was interpreted by the New York *Sun* in the same way it was by me; for it was published under these head lines: "Leprosy not contagious. No danger from the disease in this climate. Experts so report to the County Medical Society. Unjust to segregate lepers."

In the body of the *Sun's* article I find these sentences: "Danger of contagion in leprosy was set down by the County Medical Society, at its meeting last night, as being practically a medical superstition, to take rank with the once powerful prejudice against vaccination and other similar bugbears."

At a previous meeting of the County Society, Dr. Fowler, your chairman, had declared that, backed by the answers of the dermatologists, to whom he had applied (you being presumably one of them), he felt that the lepers ought not to be *deprived of their liberty, and that he proposed to release them, etc.* Then Drs. Allen, Reid and Irwin, expressed doubt as to the propriety of the society adopting *a resolution at once approving of the setting at liberty of the lepers on the island*, until a committee had investigated and reported upon the question. This committee was your committee, and at the beginning of this letter I have given the gist of its report. As there existed, at the time being, nothing requiring an expression of opinion on the part of the County Medical Society as to these matters, the obvious inference is that such an expression was required merely for the purpose of backing up the Health Commissioner, who had proposed *to release the lepers*. You know that Drs. Allen, Reid and Irwin (I have mentioned it above), had demanded such an expression of opinion.

Here is another quotation from the *Sun*. A few weeks ago, when the two lepers, strangely clever fellows, escaped from North Brother Island, General Clark said to a reporter that "the disease was not contagious in this climate under any circumstances, and that the lepers on North Brother Island were only kept there as a concession to the public's ignorant fear, induced by Biblical accounts of the disease."

Only one word more. The report says, and in your letter to me you quote it: "Whether the lepers should be kept in an institution set apart for them, is a question of expediency which our municipal authorities must decide." Between our-

selves, is not that whole affair a matter of expediency for the Board of Health?

I do not think that after you have read this letter you will think me in duty bound to correct the impression I have made by my letters to the *Medical Record* and the New York *Sun*. For you see, it was not I; it was the report of the committee of the County Medical Society that made the impression.

Very truly yours,

ALBERT S. ASHMEAD.

As an instance of British misrule in India, let me cite again the fact that propositions for the compulsory isolation of lepers, made to Parliament, had to be withdrawn recently on account of the opposition of Mr. Jonathan Hutchinson, Sir James Paget and Sir Joseph Fayrer. And I mention again that Mr. Hutchinson added, that this happened, "much to the annoyance and disappointment of some non-professional advocates." There are 200,000 lepers in India, and it is the pest-place of the whole Orient for this and several other diseases, cholera, plague, etc. As long as such medical misrule is permitted to exist by the civilized world, just so long will efforts to prevent the spread of such diseases be comparatively futile. The non-segregation of 200,000 lepers in a country ruled by Great Britain is, in my opinion, the most terrible instance of misrule in the great British-Indian Empire.

## THE CHOICE OF A PLACE OF ISOLATION, OR NATIONAL LAZARETTO.

The following has been published in the *Medical Record*, November 21, 1896:

### THE LEPROSY COMMISSION.

*To the Editor of the Medical Record:*

Sir—In an editorial of November 7th you say: "Would it not be well to have a national leprosy commission appointed to determine what is to be done with the leper here at home before we send delegates to an international leprosy congress in London to decide upon what to do with the lepers of the entire world?"

You must permit me to observe that the question what we shall do with the corporal's guard of lepers at North Brother Island is just one of those questions which will be presented to the congress. It is to frame laws suitable to this country and to every other country that we wish such a congress to meet. If the decision is left to each country separately, one country will set the lepers loose, as our health commissioner here proposed to do; another will pen them up like animals, in utter disregard of such human and religious rights as certainly ought to be left them; another country will put its leper asylum in a moist climate, like Louisiana, for instance, which favors the multiplication and propagation of the bacilli, and also that of innumerable species of insects, which all may contribute to the spread of the disease, etc.

No state board of health (I have already put myself on record with this statement) should have anything to do with the disposition of a leper.\* The local authorities will, in many cases, wink at the escape of lepers, or let themselves easily be persuaded that they are not dangerous. Our national government should have full authority to take from every state its lepers, and put them in a national lazaretto or reservation. No better place could be found for this than some part of the Yellowstone Park, where the climate is unfavorable to the

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\*That in the United States boards of health should not have anything to do with the isolation of lepers, is further shown by the situation of New York city. Competent authorities are well aware that there are at least one hundred lepers loose in the streets of New York.

lepra bacillus and where there is plenty of room for leper colonies—that is, for the lepers and their families, if the latter chose to follow them.

According to Hansen, the tubercular leprosy is found in moist climates, the maculo-anæsthetic form in dry climates, and the only difference between the two forms is in the degree of virulence and multiplication of the microbe. Wherever “cures” have been reported, it was always in the maculo-anæsthetic type. This type has a natural tendency spontaneously to “cure” without any medication whatever. (By “cure” is meant here only the cessation of the activity of the disease, the anæsthesia and previous ravages, of course, remaining.) Now, if we put all our lepers in the driest climate to be found in the country, away from the sea-coast, whose influence is baneful, we must of necessity prevent the multiplication of the lepra bacilli in the human body and diminish their activity.

It is not likely that any government will formulate laws in accord with this scientific statement, unless urged to it by such an imposing body as would be formed by the competent and official representatives of all the countries of the world.

Let me add this: The opinion of a man in anything pertaining to this question can have weight and authority only if he has for a considerable time lived in countries where lepers are very numerous, where they are counted by the thousands, ten thousands, the hundred thousands, and where the population has for many centuries been compelled to observe the disease, to fight against it, etc.; and the studies made during a few days, on five or six lepers, entitle no man to speak with authority on any such question. All the competent men say that the disease is inoculable and that isolation is indispensable.

ALBERT S. ASHMEAD, M. D.

This letter refers to the choice of a site for a national lazaretto, and shows that a dry climate is to be preferred. Maculo-anæsthetic patients, and in these patients the lepra bacillus is not as active or not as multiplied as in the tubercular patients, have a tendency to become purely anæsthetic. The reason is that they are generally living in dry climates which are antagonistic to the bacillus.

It must, however, be observed that this advantage of climate would not be equal for all human races, because the

soil in which the bacillus lives has much to do with its development. In the states of Minnesota and Wisconsin, where a number of lepers have settled, and which are noted for the dryness of their climate, Hansen found, in 1888, no extension of the disease, even in the leper families. Dr. Grönvold, of the State Board of Health of Minnesota, July 1, 1894, gives this as the experience of Norwegian lepers in these countries :\*

"The experience in this country has not been very long, although it already includes several generations. Such as it is, some of its results are : 1. In no children or descendants born in Minnesota of lepers—there are great-grandchildren—has there been any sign of the disease discovered, although under frequent observation. 2. Up to date no leper has been born in Minnesota. 3. In many cases the disease was not recognized for a long time after the arrival of the persons affected in this country—how long it is difficult to state, as the first symptoms are obscure, not noticed, or misunderstood; but in every single instance the leper has some time had his home in some place in the old country, where the disease was endemic, while in but a single case has infection in this country been suggested, but as that came from a locality in the old country that has been for years a nest of leprosy, the possibility is that he got it there. These facts, as far as they go, seem to suggest that the disease in this country (that is, in that climate) is not so easily acquired as in some other countries. Looking for the cause, some points present themselves for consideration:

"1. New houses with new furniture and furnishings, in a new country, harbor no sources of infection, and the better economical condition promotes the sense of need for cleanliness, both for health and comfort—a cleanliness which seems in leprosy to be the main reliance against contagion. 2. The

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\*Dr. Hewitt, Secretary of the State Board of Health, writes me : "Dr Grönvold's circular explains the position of the State Board of Health, as occupied since 1872. The record is as true to-day as it was when the last report was written. We know the whereabouts of every leper in Minnesota; their own people, often friends, report them, as do physicians and officials, and they are kept under a quiet surveillance."



commonly dry and always windy climate of this great inland plateau, with its great and sudden changes of temperature, open as it is towards the Gulf of Mexico, and towards the North Pole, may perhaps make it more difficult for the *materia peccans* to fix itself on persons and things. The hot summer that opens up the pores of the skin and drains the system that way, and the cold, stormy winters bracing up the body, may have influence in that direction. That the climate must have some influence in preventing the spread of the disease seems yet more probable, when we remember that the early settlers, often with a large family of children, lived for a long time in small, close and badly ventilated log houses, closer, even, than they were accustomed to in their old homes. Even if they did not bring with them such sources of contagion as unclean houses and old furniture, they at least had for some time old clothes, so that it would be a wonder if old and young could have observed the cleanliness necessary to prevent contagion, if the effect of climate had not been of a nature to make contagion more difficult. It seems certain that the disease, once established, runs its regular course here as elsewhere, perhaps a little slower. 3. The change in the physical constitution of people who have lived here some time, the effect of acclimatization and of other influences, may make the individual less susceptible to contagion."

For climate, for thoroughness of isolation, for excellent surveillance of lepers, Minnesota is the first country in the world.

It is believed by many writers that the leper bacillus is spore-bearing, and that if the development of the spore can be prevented, the disease can be prevented from spreading. Therefore a climate that will destroy the spores, is the climate necessary for the isolation of lepers. It is evident that a dry climate is destructive to the spores, because there the mild forms of the disease are found. It follows that all leper asylums should be distant from the coast line.



## LATEST TREATMENT OF LEPROSY.

Dr. Carrasquilla, of Bogota, some time ago sent me some of his serum to transmit to Dr. Hansen, for trial in the Langaarde Hospital. He seemed anxious to have a report on his serum, by Hansen, presented to the congress. I have sent it, and the Norwegian leprologist will give it a fair trial. I have sent a second sample of the same serum to Dr. Petersen, the distinguished leprologist of St. Petersburg. I expect him to make also a report on this matter to our congress. I have also sent samples to Dr. Jones, of the Louisiana Leper Home, Dr. Smith, of Tracadie, Dr. Havelburg, of Rio Janeiro, and to Dr. Anderson, of San Francisco. These gentlemen will report to me. I publish the following letter, dated December 13, 1896, in extenso, in order to show that Dr. Carrasquilla believes firmly in his serum, and that he only wants it to obtain a fair trial outside of his own country:

"I inform you of the reception of your favor of the 5th of November last. I take much pleasure in sending you the consignment of anti-leprous serum which you asked for. Four boxes destined as follows will follow by this mail, one for yourself, another for Dr. Hansen, a third for Dr. Alvarez, and a fourth for the Hawaiian board of health. As to the selling of the serum, I cannot do it, because I simply dispose of small quantities produced by the help of the government, and intended for the lazarettoes of this country. However, I thank you for the help which you offer me. The efficacy of the anti-leprous serum, tried for one year on a large number of patients, leaves no doubt, as you will find out yourself. The process gives all kinds of security which makes me hope that you will recommend it to Dr. Alvarez' attention, and persuade him to study it.

"Yours most respectfully,

"JUAN DE DIOS CARRASQUILLA."

Under date, Honolulu, Hawaii, January 1, 1897, Dr. Alvarez writes: "A week ago I began to treat the lepers with serum prepared (by myself) according to the method of Carrasquilla, and so far I have not observed the reactions he describes either in the lepers or in the horse. Such re-

actions may appear later on. I have not heard anything of the anti-leprous serum of Kitasato."

On March 4, he wrote me: "I have received and used the serum that you sent me and to Mr. William O. Smith. I was using similar serum, which I prepared here, since the 26th of December. So far, I do not see any change worthy of notice in my patients, except one who has recovered sensibility in one hand and arm, formerly anæsthetic. There is also a boy with tubercles, who shows some improvement, but we must be cautious in this matter because lepers often improve without any treatment."

Dr. Anderson, of San Francisco, who recently returned from the Hawaiian islands, informs me that the bacteriologist, Dr. Alvarez, is at present carrying on some experiments at Kalihi, upon the toxins of the Hansen bacillus.

"We are endeavoring to separate the toxins from the anti-toxines, and we are endeavoring to administer the anti-toxines as a possible curative measure for leprosy. I agree perfectly with you, that, so far as is known, there has not been found any remedy for leprosy. Recognizing, as I do, that small-pox has a prevention; that rabies has a cure; that diphtheria has an anti-toxine; that tuberculosis will find an anti-toxine, not in a mixed toxine, as is at present used; that tetanus has an anti-toxine, and that we are on the eve of discovering anti-toxines for carcinoma and various other diseases, including yellow fever and typhoid fever; I believe most certainly, that we shall in time be able to obtain and segregate the anti-toxine from the bacillus of Hansen, and use it as a curative, or at least an ameliorative treatment for leprosy. It has been my privilege to visit leper lazarettoes in most of the civilized countries on earth. I have myself seen many thousands of lepers in my tour around the world. I have studied the disease more or less carefully, without making a specialty in any way of the malady, and I am convinced that our future hope lies in finding an anti-toxine that will destroy the bacillus in the system."

Hansen, Goldschmidt, Havelburg, Putnam of Colombia, are all skeptical as to the possibility of obtaining a remedy for leprosy from leprous serum, either directly, or by passing it through an animal. It seems to me that the argument of all these gentlemen is unanswerable. How can you obtain a serum from leper blood, when it is generally admitted that the blood contains no bacillus? Without the presence of the bacillus in the blood, how in heaven can you extract a toxine from it? Nobody ever succeeded in cultivating the leper bacillus outside of the human body; it absolutely does not exist outside of it, as far as known. Therefore, no toxine being obtainable, the finding of an anti-toxine is out of the question. It seems evident to me that the statement that Dr. Alvarez searches in this moment for an anti-toxine out of human blood is a mistake; for the Hawaiian leprologist has certainly abandoned this quest, and is now operating on the bacillus prodigiosus in bouillon. Evidently Dr. Alvarez has come to the conclusion that nothing is to be gained from where nothing exists, and is now following new tracks.

When the lepra bacillus was discovered, the event excited an universal hope that, knowing now the enemy, we might in a short time find means to destroy him. But twenty-five years have passed since, and we have not been able to reach the enemy. This is due, at any rate in part, to the fact that the bacillus seems to be non-inoculable into lower animals, to which we have to look for all possibility of experimentation. There is, of course, that other fact, that the bacillus cannot be reached by remedies in the human body. There is also the difficulty resulting from the long incubation of the bacillus; we recognize its presence only when it is too late to stop its action.

Everybody understands that if we could cultivate the bacillus in a field other than the human tissues, we should probably obtain its toxine—the peculiar toxine which every bacillus has, belonging exclusively to its kind. Having the toxine, it would not be difficult, I think, to obtain the anti-

toxine which every organized being at once throws out to protect itself against the invasion of an enemy.

We have failed, and the solution of the leper problem is to-day as far from our hopes as it was in the times when the celebrated discovery of the special microbe had not been made. Indeed there are to-day 100,000 lepers more than before the bacillus was discovered.

It is my opinion that no one now knows a cure for leprosy. There are only two things which we can do: 1. Prevent the spreading of the disease, a thing which would be extremely easy, if, as Dr. Hansen told me in a letter which he did me the honor to address to me, some weeks ago, mankind were not so stupid. Even the imperfect isolation of Norway has, according to statistics, produced very satisfactory results—the isolation, not the bacillus. 2. We can improve the pitiful condition of the lepers, and this is a duty which any good man, be he a Christian or not, will feel to be an urgent one.

To solve the leper problem of the world to-day, either a cure must be found for the disease, or, by government edict, the lepers must be separated completely from the rest of the community.

Every serious leprologist acknowledges that there is no cure at present. The leprologists are divided in two camps: Some try to find a remedy through experimentation of the bacillus, which, as I have shown, is almost a hopeless enterprise. The others rely on nothing but isolation, and that, if it is conscientiously practiced, must win.

## COLOMBIAN LEPROSY AND THE CHARITY OF THE CHURCH.

In answer to my request for photographs of patients, before and after his serum treatment, Dr. Carrasquilla says: "I regret to say that I have been a little careless in taking photographs of the patients which I treated at the beginning, and for that reason I cannot send you those you would like to have. Of patients before treatment I am taking some now. But it is no time yet to take them after treatment."

He sends me the following discourse pronounced in the ordinary session of the National Academy of Medicine, of Bogota, October 27, 1896, by Dr. Edward Roman, commissioned by the Department of Panama to study the sero-therapeutic treatment of Greek leprosy in the Carrasquilla Institute.\*

*Mr. President and Gentlemen*—I must before all express my deepest thankfulness to this honorable corporation for the honor that it is bestowing on me, allowing me to speak about so important a subject as the treatment of leprosy, by means of serotherapy. Having not prepared myself beforehand, I must claim your indulgence for my want of oratorical talent, if I do not fulfill my undertaken task as well as I should wish in a matter so difficult and so intricate. In consequence of painful circumstances which I do not wish to expose here, I have been occupied with the most lively interest the last eleven years with the cruel disease which is in this day the terror of the republic.

In the departments of Bolivia and Panama, I have treated a great number of patients, and employed in the treatment all the methods that are known, and I think I have the right to claim at least a part of the results which have been obtained by means of the chaulmoogra. But it behooves me, gentlemen, to observe that alkalines, intra and extra, have been used in conjunction with that substance; nux vomica; balsam of gurjun, with the second water of lime, in the maculæ

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\*Dr. Roman was especially invited by the secretary, in the name of the president of the Academy, to attend this session, and the floor was conceded to him in virtue of a proposition presented by Dr. A. Aparico, and approved by the Academy.

and lepromas, and I may perhaps say that I attribute to the use of the alkalines a large proportion of the improvements, transitory or temporary, which have been obtained by the chaulmoogra, for I have observed cases in which, with the exclusive use of the last agent, sometimes the results have been negative. Sometimes, through slight improvements, the disease has increased to such a point that death has been the final result. I remember, in this moment, the case of a young lady of distinguished family, in which, after a slight improvement by the chaulmoogra, the disease took such an increase that the patient died at a time when I could not have looked for such a fatal result from the natural evolution of the disease. However that may be, the treatment by chaulmoogra has produced no other effects, but simple transient improvements, or else perfectly negative results. And in no case, not one, have I observed the complete restoration of sensibility. I insist in ascribing a large part of the result obtained with chaulmoogra, to the auxiliary action of the alkalines. For, as has been said by Hardy, if my memory serves me well, Carlsbad and Vichy have cured many lepers; and I explain to myself these actions of the alkalines, and that of the salicylate of soda, recommended by Hansen, to the fact that a considerable number of patients present clear antecedents of arthritism. I have found them in many patients whose observations I possess. In some cases these arthritic antecedents existed on the paternal side, while on the maternal line were found antecedent carcinomas. On this last observation I have read, I do not know where, analogous reports.

At my arrival in this city, I communicated to Dr. Juan de Dios Carrasquilla L., the observations which I possess as to the arthritic antecedents of many lepers, and that eminent professor told me that he had heard of similar facts by a distinguished physician of this capital. Eventually, gentlemen, in the course of the treatment followed in the institute, Dr. Carrasquilla and myself have had occasion to verify said observations.

Gentlemen, the informations which have been read were nothing new to me, for they are the same which were published in the official journal of the 8th of September last. I find in them some deficiencies, and at any rate I am sure that the informations refer only to six weeks of treatment, which you can verify by the number of the injections made in the patients, and which did not pass eight or twelve.



Referring now to the serotherapeutic treatment introduced by the eminent Dr. Carrasquilla, and according to the observations I made during my residence in the institute, I may assure you, gentlemen, that neither by chaulmoogra, nor by any other treatment—I say by any other—have been obtained such surprising results. By the serotherapeutic treatment lepromas disappear, by reabsorption or by suppuration; the ulcers cicatrize; the maculæ pale, and finally are obliterated; sensibility reappears, appetite and sleep likewise, and the moral nature of the patient improves visibly. I can quote to you, among many, several cases which I consider some as near curation and others as cured. And I should not hesitate a moment to sign my name to this declaration. For instance, there is a boy about fourteen or fifteen years of age, who has been attended by the studious and intelligent young man, Dr. Pedro Quesada Romero. This young fellow received five injections, and had to retire on account of the decree of General Casabianca. About two months ago he reappeared in the institute with the old ulcers cicatrized, the lepromas reabsorbed and sensibility restored. I do not hesitate to declare that this young man is cured. I have not been able to present either the patient, or the respective clinical observation, to Dr. Augustine Uribo, to whom I had promised both, because Dr. Quesada Romero, who had possession of the observations was occupied with his doctorate examinations. I can quote also, gentlemen, the case of a young lady who lives in the *Plazuela de Las Cruces*, whom I also consider as cured. The face, the neck, the arms, and hands, are in as good a condition as if they had never suffered of any such disease. I regret not to be able to verify the complete examination of her whole body, being a client of the civil practice; but she assured me herself that her whole body was in the same condition as the parts I have mentioned.

I shall quote also the first patient treated by Dr. Carrasquilla. Her name is Flora, and she lives up there, toward the end of Thirteenth street. This woman, who was in very bad condition, who had lost brows and lashes completely, has them to-day, beautiful, new, silky and well furnished. The cutis of the cheeks, where there existed before voluminous lepromas, has been replaced by a fine and soft skin, like that of a little girl. Her sensibility reappeared, and two months ago there existed only a slight shade over the left ciliary arch. I can also quote the case of a turner, who received likewise five injections, and who by the decree I have men-



tioned before, found himself obliged to hide. He reappeared in the institute a month and a half ago, with sensibility restored; the enormous ulcers which he had before are completely cicatrized. The brows were growing again, and the lepromas of the face have disappeared to such a degree that at the present day he walks freely about the streets without being molested, as his hat hides the only lepromas which remain on his forehead, and which are on the road of rapid regression. This man, who formerly could make no use of his hands, makes a living now by working in Santa Barbara.

I can quote a certain Quiroga, a really monstrous case. He was photographed before beginning his treatment. His improvement is such that people don't know him now. Finally, gentlemen, I shall quote to you a case of double lepra—that is, from the middle of the body downward, Arab elephantiasis, with monstrous feet and legs, full of excrescences; from the middle of the body upward, Greek elephantiasis.

I was keenly interested in having this individual, whose name is Coy, included in the number of the patients of the commission, and I obtained the consent of Dr. Heliodoro Ospina L. G. The patient was photographed; his sensibility examined; it was absent from the whole body.

The 23d of September last, Dr. Elias Rojas, commissioned by the government of the Republic of Costa Rica, to study the sero-therapeutic method of leprosy, began the treatment; eight days had not passed since the treatment had begun when we observed, with the greatest astonishment, not only that sensibility was reappearing, but that of the lepromas of the face and of the arms, some suppurated, others flattened, others were discolored. More than that, there happened what we dared not hope for—the excrescences disappeared, the swelling in the feet vanished, and their volume was reduced in such a measure that he wears now on the left foot hemp shoes (*calza alpargata*). Thus we see that the antileprous serum works actively even in Arab elephantiasis.

I could quote many other cases, gentlemen, if I was not afraid to abuse your patience, and also draw too much on my own strength by too vast an exposition. But you must have observed, gentlemen, in the report presented by Dr. Nates, the very bad hygienic conditions under which the sero-therapeutic treatment has been applied in the hospital of Agua de Dios. These unfortunates sleep on the ground, ill dressed, badly sheltered, receiving hardly twenty-five cents as a ration

a day, which they use for the greatest part in drinking too much brandy and *chicha*. Many of them have not felt more water on their bodies than that of their baptism. And if any of these wretches wants to take a bath, he has to undertake a two leagues journey under a scorching climate, whose temperature is from 38 to 40 C.

You know, gentlemen, the important part which hygiene in general, and baths in particular, play in the treatment of skin diseases, and the absence of all these hygienic prescriptions puts still more in relief the efficacy of the serotherapeutic treatment. I am on some points in accord with the report presented by Dr. Nates.

It is evident that in some cases we find ourselves unfortunately in presence of abscesses which can be attributed now to a beginning of decomposition of the serum, now to the want of antiseptic rules, or else to a lack of precautions in injecting the doses. But, at any rate, these accidents are of small importance, and easily remedied by the timely suspension of the treatment.

In trying to obviate this inconvenience, Dr. Carrasquilla has undertaken a series of experiments, administering the serum by the stomachal way, with the best results; for among others I am able to mention the case of a young lady, of a village of this department, in whom the serum produced the same reactions as in the hypodermic way, and even greater ones. This young lady was capable, after one month, to our great astonishment, to return to her home, wondrously improved.

I do not see that there is any incompatibility in some cases which resist a little the treatment in associating with the serotherapeutic method some external applications. This has been the opinion of Dr. Carrasquilla, and, with his consent, we have commenced to apply the actual thermo-cautery, in some of the most protuberant lepromas, of the man Coy, of whom I have spoken before. This patient accused a keen sensibility under the red point of the thermo-cautery.

I do not think, gentlemen, of course, that the last word has been said in the matter; but I am sure, having seen it with my own eyes, that we have found an agent which produces modifications so deep, that it allows us to hope that the terrible scourge of leprosy, which now lashes our beloved country, will disappear some day under the serotherapeutic treatment, if the whole medical body of Colombia, and those whose

duty it is to guard over the public health will consent to take part in this great work.

We need, among other things, serious studies of bacteriology ; and as there does not exist in the country one who has devoted himself seriously to these studies, it is absolutely necessary, cost what it will, to call a professor of these matters, while the proper young men may be trained among our compatriots. It is necessary, for instance, to establish the comparative value of the serums of the horses, according to the number of injections which have been received, as it has been observed that in many patients the action of the medicament is extremely rapid and active, while in others it is very slow and subdued.

To wind up, gentlemen, I beseech you to excuse the deficiencies of my exposition, for you know how difficult it is to speak impromptu on matters so vast as those which occupy us, when a man is lacking, as I am, of oratorical endowments, and has to address, as I had, an audience so respectable and so competent."

This discourse reveals the real cause of the extraordinary spread of leprosy in Colombia. It is clearly the want of isolation. The very examples quoted by the orator show patients not cured leaving the hospital, going to work somewhere, coming again. In order of putting into stronger relief the efficacy of the treatment, the speaker does not shrink from giving further publicity to Dr. Nates' description of a leper hospital in Colombia, the most important of all, that of Agua de Dios : sleeping on the ground, want of food, rations spent for brandy, terrible uncleanness.

The weak points in the Carrasquilla serum treatment, or at least in the explanation given by him and his friends, are : 1. They do not furnish photographs of the patients before and after treatment. 2. No information is given as to the presence or absence of bacilli. 3. Actual cautery, or local remedies, which have been known and used time out of mind, are resorted to with, of course, some plausible excuse. 4. The short time in which the cure is said to have been effected. Above and before all these things it must never be forgotten that *there are no bacilli in human blood, that the disease is not*

*inoculable in animals.* Therefore, we are almost allowed to condemn the anti-leprous sero-therapeuty *a priori*.

It will strike the reader that even Dr. Roman declares himself unable to exhibit photographs.

As Dr. Roman says: "What is needed in Colombia is a scientific bacteriologist." As long ago as 1895, I wrote this to His Eminence, Cardinal Satolli:

NEW YORK, November 29, 1895.

*Most Reverend Sir*—I have the honor to enclose a correspondence I had with the United States minister in Colombia, regarding the question of leprosy in that country, and I enclose also a letter I have written to the Journal of the American Medical Association, embracing what Mr. McKinney has told me. I send you also a conference of the Rev. Father Rabagliati, and the pastoral of the Archbishop of Bogota. From these documents you will perceive that the question of leprosy in Colombia is a very serious one; that these 27,000 lepers have asked the government for bread, and have received a stone. They now appeal to that church to which they all belong. As you will see, they have raised \$161,000 for a great national lazaretto. What is wanted, above all, is a scientific man to join in Rabagliati's work. Will you be kind enough to give me a letter, introducing Dr. Armauer Hansen, of Norway, the discoverer of the leper bacillus, and who is now Inspector General of Leprosy in Norway, to Father Rabagliati, and the Archbishop of Bogota? Dr. Hansen has reduced the number of lepers in Norway from 2,833 in 1856, to 954 in 1890.\* He is considered by all leprologists as the highest authority in the world in this matter, and he has expressed himself, in letters to me, as being willing to do anything in the interest of lepers all over the world. I am sure that if Father Rabagliati would ask Dr. Hansen to make a short trip to Colombia, great results would be obtained by the co-operation of these two men.

I am, of your Eminence,

the most humble and devoted servant,

His Eminence, ALBERT S. ASHMEAD,  
CARDINAL SATOLLI,

Apostolic Delegate, U. S. A., Washington, D. C.

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\*"At the end of 1892 there were only 800 to 900." Dr. Edw. Kaurin, *Spredte Bemaerkninger om Lepra*. (Various observations on leprosy.) Christiania, Norway, 1895.

I received no reply to this letter. I wrote again June, 1896, as follows: "May I call the attention of your Eminence to my humble request of November 29th regarding a letter of introduction for Dr. Hansen, the famous leprologist of Norway, to Father Rabagliati, of Bogota, Colombia, the leading spirit of the movement to found a grand lazaretto for the relief of lepers, of whom there are, it is said with authority, 27,000 in the republic of Colombia. Your Eminence will certainly excuse my persistence in again addressing you, considering that the terrible scourge of lepra is my principal and disinterested study."

In answer to this, the Apostolic delegate simply did *excusare laborem et ecclesiastica vincla*, as follows:

"APOSTOLIC DELEGATION.

"WASHINGTON, D. C., June 20, 1896.

"*Dear Sir*—I have just received your letter of yesterday. I remember to have received your former communication, together with a little pamphlet on the subject of leprosy. You may perhaps imagine the enormous amount of correspondence which comes to me, and that a great deal of it does not pertain to my duties and work in this country. In order to accomplish what I am strictly bound to do, I am obliged to set aside everything that does not fall within the limits of my duty. As a result many letters have to go unanswered. The matter concerning which you have written me, while interesting, is entirely outside my line of work. I am acquainted with no ecclesiastics in South America nor do I know anything about their systems there. There is nothing that I can do to assist you in your work, and that is probably why I did not write before. I fear too that the documents you speak of are lost, for I cannot find them among my papers. I regret any trouble that may be caused you, but it would be simply impossible for me to keep track of the mass of matter not pertaining to my work which continually pours in on me.

"With sentiments of respect,

"I remain most faithfully yours,

"FRANCIS, CARD. SATOLLI,

"P. Del. Apos."

In Colombia the problem of leprosy is wholly in the hands of the church, but the church ought not to try to solve it ec-



clesiastically, which is perhaps asking much of the church. If it is not handled in a scientific and forcible manner, by inviting to the country men of known scientific ability, like Hansen, and framing and enforcing strict laws of isolation, the population of Colombia will have the same fate as the Kanakas of the Sandwich. Damien heroics, the martyrdom of Sisters of Mercy, the charity of the church,\* can do no lasting good.

These things will be a beautiful chapter in ecclesiastical history, and add to the glory of the church the halos of many new saints; but this glory will be rather a thorn in the side of the leprologist, the philanthropist and Colombian patriot. For it is the suppression and prevention of the scourge that is wanted, not glorious instances of self-sacrificing devotion to the doomed victims of to-day.

NEW YORK, February 11, 1897.

REV. FATHER L. W. MULHANE,

Mount Vernon, Ohio:

*Rev. Sir*—Thanks for your book, "Leprosy and the Charity of the Church." I have read it with a great deal of interest. Allow me to speak quite frankly to you. I do not think that any church can ever solve the leper problem. This can only be done by the powerful interference of government. Isolation alone, perfect isolation, however hard it may be for the victims and their families, will conquer the scourge. All else is foolish waste of time, money, labor and valuable life. As Dr. Mouritz, of Sandwich Islands (Mapulehu, Molokai), wrote me last week, the apathy of governments, the caprices of politicians, the application of remedies that cannot cure, are responsible for the destruction which leprosy is still working. There, the number of lepers, year in, year out, remains the same, 1100 or 1200, and it is here that your church has done its best work. Lives like Father Damien's ought not to be wasted; his death accomplished nothing so far as the solution of the leper problem is concerned.

In Colombia, South America, your church is doing great work for the alleviation of human sufferings. Scientifically it is chasing the will-o'-the-wisp. Even Agua de Dios, the greatest leper hospital in the country, is operated unscientific-

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\*See Mulhane, "Leprosy and the Charity of the Church."

ally, and the cry comes from there now for bacteriologists to teach the doctors.

In Louisiana, the leper asylum is in the hands of the Roman Catholic Archbishop of New Orleans. Yet that asylum is suffered to exist in a climate which only provokes the spread of leprosy and the multiplication of the bacilli. These instances of mismanagement can be remedied only by government laws. Those to be taken care of are the healthy, and all our endeavors ought to be directed to protect them. This is infinitely more important than to nurse those already afflicted and *lost*.

Do not think one moment that I mean the least aspersion of the church to which you belong. It has been known in all times as the mother of great devotions and noble deeds. But facts are facts, and there are things which even the church cannot do.

Yours truly,

ALBERT S. ASHMEAD.

MT. VERNON, OHIO, February 12, 1897.

A. S. ASHMEAD, M. D.

*Dear Dr.*—Yours of yesterday at hand. Your ideas and mine coincide very much. The point I had in compiling my little book was exactly to emphasize the fact of the supineness of governments. Father Damien's life accomplished one fact, and that was to compel the Hawaiian government "to do something." The church has accomplished what we find to-day growing—namely, an interest in the subject of leprosy. By her efforts she has called attention to the prevalence of the disease. You state that the leper colony of Louisiana is under the care of the Catholic Archbishop of New Orleans. Practically it is now, but it was forced upon him. The State Board asked repeatedly for sisters as nurses, and were not content until they obtained them. Now the doctors have resigned because the state would not uphold them in their efforts to segregate, etc. This you will find in my chapter on Louisiana. Those of the church who volunteer to take care of lepers are always willing to be segregated just as if they were lepers. You think it is incurable. So do I, because the leper bacillus can not be cultivated except in human flesh. And even this is not *positively* a fact, is it? Dr. Arning's case, and the only one, is not proof, because Keanu, the convict, had ancestors lepers. However, I am glad to know you read my book, and have left me off so



easily, because a good many have been firing at me as an alarmist, etc.

Segregate, isolate and stamp it out thereby. The difficulty is with human governments to interest them, to drive into their heads the necessity of it.

Yours truly,

L. W. MULHANE.

NEW YORK, April 10, 1897.

REV. L. W. MULHANE,

Mount Vernon, Ohio :

*Rev. Sir*—The *New York Medical Journal* two or three weeks ago reviews your book, I must say, rather viciously. Have you seen it? I publish my letter to you, and your reply, as a review of "Leprosy and the Charity of the Church," in the *American Medical Journalist*, of St. Joseph, Missouri. This is the American medical editors' newspaper. The editor of the *New York Medical Journal* will therefore consider my article as an answer to his.

I had a long letter from Joseph Dutton. He describes his symptoms to me, from which I conclude he is a leper. There is one more wasted life for you! *Cui bono?* What is the use of all that martyrdom? Give me practical, systematic, solid work. *Labor omnia vincit improbus.* (Even *sine ecclesia.*)

Yours truly,

ALBERT S. ASHMEAD.

MOUNT VERNON, OHIO, April 12, 1897.

DR. ALBERT S. ASHMEAD :

*Dear Doctor*— . . . Am sorry to hear of Dutton's symptoms. You say, *Cui bono?* Well, doctor, just look at it this way. Have not M. D.'s lost their lives experimenting? Somebody must nurse the poor lepers. Sir Morell Mackenzie, in his "Revival of Leprosy," says: "Father Damien was able to humanize the poor outcasts for whom he gave his life. There is no reason why this memorable example should not bear fruit wherever lepers are found." *Cui bono?* you say. I answer, humanity, God-given charity. "Greater love than this no man hath, that he lay down his life for his brother."

Yours truly,

L. W. MULHANE.

NEW YORK, April 14, 1897.

REV. L. W. MULHANE:

*Rev. Sir—* . . . Let me say that Sir Morell Mackenzie's book, "Recrudescence of Leprosy," I think was the title, was received by the medical public with a lifting of the nose. You know what *naso suspendere adunco* means.

When a doctor contracts syphilis, tuberculosis, or, since it is considered inoculable, leprosy, the M. D. is criticised, and severely, for not taking necessary precautions. He is not sainted by any means, nor looked upon as a martyr. A scientific physician should not allow himself to become inoculated. Science and religion, not religion and science, must work together. Cui bono? The bonum is the destruction of leprosy, not the sacrifice of any man for the lepers. Humanity, you say, and God-given charity! Neither the one nor the other can eradicate the disease. This can only be done by laws of isolation, which prevent the contamination of the healthy.

Very truly yours,

ALBERT S. ASHMEAD.

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## THE LEPROSY QUESTION.

A first congress of all the powers which can be called or arrayed against leprosy, will meet, we hope, this year, in Berlin. I will say at once a thing which a number of eminent leprologists have never been able to understand, that is: We do not want a multitude of learned men to come together and speak in an exceedingly interesting manner about a disease which every one of them knows to be incurable. We want to see a number of men, whether leprologists or not, possessing all the powers in this respect which their governments can put into their hands, in order to make laws, sure of enforcement, against the spreading of the disease and the inoculation of new countries by wandering lepers—that is, for the maintenance of perfect isolation; not isolation as it exists in private houses of Norway to-day (for Norwegian isolation is far from being complete), but real, complete isolation in

separated colonies, by decrees enforced by government. These colonies would not only prevent the spreading of the disease, but also secure for the poor victim of the disease a less wretched life than under existing laws and conditions he can expect.

I have thought that the influences through which such results can be obtained are the following: A permanent World's Committee, each member of which would represent the good intentions and the power of one government; the interest of the church, which wields the most power in the leprous countries—the Catholic Church in Italy, Spain, Portugal, South America, the Church of England and that of Mohammed, in the British Empire, the Buddhist religion in Japan and China, etc;\* the influence of the Geneva Red Cross, to care for the victims of the scourge in non-Catholic countries. Of course the Sisters of Mercy could do an immense deal of work; and if I mention them last, it is simply because the greatest numbers of lepers are in Mohammedan and Buddhist countries, where, I can say it, for having lived and exercised my profession of a physician in such countries, their best work would be considered as an attack and an insult. The Red Cross, with its secular character, has branches already established in Japan and China. Our work is not a missionary one; it is a medical one, a simple affair of the body, not of the soul. The Japanese will leave us the bodies of their sick to take care of, but the garb of a Sister of Mercy would be resented as the uniform of an enemy, and they would think it their holy duty to save the soul of their poor lepers, even if they could do nothing for their bodies. There is as much faith among the Japanese, in their own tenets, as there is among us in ours.

Leprosy is contagious, at least inoculable, not hereditary, and if we take care only of one generation of lepers, and prevent inoculation of children, the disease will be eradicated. Is

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\*There are 200,000 lepers in India, Mohammedans and Hindoos; 100,000 lepers in China, Buddhists and Taoists; 100,000 in Japan, Buddhists and Shintoists; 27,000 lepers in Colombia, South America, Catholics.

this not worth fighting for? Could we obtain it only by talking? Should not every government take official notice of our congress which can bring about such great results, results which the last century would not have dared to hope for?

In countries where even imperfect isolation has become a law, like Norway, the Sandwich Islands, etc., this terrible disease has given way, while in countries, for instance Colombia, where isolation has not been enforced, the scourge has terribly increased.

### ASEPSIS: PREVENTION BETTER THAN CURE.

There is a singular agreement of precept between some of our new philosophical schools and the doctrine of the Orientals as to our duty to the race in case of disease. The doctrine of our philosophers, teaching the survival of the fittest, and our duty to the race, not to interfere with the eliminating operations of nature, is not put into practice, and considering that Christianity is our religion and is not looking forward at present to any imminent decline, it is not likely to pass into practice for some time to come. The Orientals criticise Christianity because it seems unduly and undutifully occupied in counteracting the decrees of nature, by saving, with fostering care, individuals of the race, preserving in hospitals all that ought to perish, and heaping up, so to speak, the sweepings of nature, to perpetuate moral and physical uncleanness. True, they also are anxious to build hospitals; but if they were let alone perhaps they might build them only for animals, whose races are not important enough to make it a pity that disease and vice should be allowed to be transmitted among them from generation to generation. Wherever the Oriental spirit has developed on its own lines, it has endeavored to eradicate the human weed, to sweep away all human influences detrimental to mankind, whether they be represented by disease or by crime, always ready to sacrifice

any man to the interest of men. The leper was cast out to die with his disease in unpitied misery and solitude ; the beggar, unable to earn his bread or support his family, was excluded from help and intercourse of any kind. What could the race expect from his seed ? What is the use of amputating a limb which tuberculosis or syphilis or leprosy is gnawing at ? Why should the leper's seed be preserved to perpetuate his rottenness ?

Why should we so tenderly humor the madman, use infinite care and infinite treasures of knowledge, and miracles of skill, to bring the diseased brain into a condition which makes the man innocuous, tolerable, while yet he can never be normal, rational, useful ? His brain fibre is degenerated, and should not be transmitted to future generations.

When we Westerners discovered the bacterium, we thought that here we had the cursed cause of all disease, and forthwith began to give him chase or to lay siege to his citadel. The Oriental may have thought grimly, "Wherever you are, O microbe, you are in the state where Fate has placed you, and must do its behests. Yours is the empire of the abnormous, the morbid, the destructive. Whatever part of creation you establish yourself upon, is by your very presence stamped as bad unhealthy, undeserving of existence. Therefore stay in your domain, we do not envy it to you. Eat up what belongs to you ; it can do us only harm." These Eastern populations believe in fate ; they are the true Stoics. "What is written, is written, Kismet. If we are doomed to be cut off by cholera we shall not escape it, and the fear of the inevitable shall not prevent us from plunging our limbs into the lethal waters of the Ganges, or quenching our thirst in the Mecca pools." And what does it mean, that our own people, not very long ago, considered the use of vaccine as being an interference with the will of Providence ? They called Providence what in the Orient they call Fate. It would seem that Medicine in general is just the opposite of this magnificent supineness. The physician tries to save his individual, let what may become of the race. There is, if you like, another

kind of recklessness, not supine, like the Oriental, but busy and officious.

It would be a much higher task, if, instead of waging war against the bacillus, who has invaded an individual, medicine should find means to obviate and suppress the bacillus, or its development, or its culture, before it invades the race by the individual—that is, should create in the organism such conditions, should produce such constitutions, as would not allow of the existence of these microscopical pestilences. That would be asepsis instead of antiseptis. Here is what asepsis has to do. It stands at the fountain head, its mission is to keep the spring of life free from impurity. Let a commission or any other body of scientific information and action go to Russia, to the original habitat of the typhus germ, or to India, China, Japan, the greatest domains of leprosy; let it there oppose the development of the diseases before they begin their trip around the world. The first thing to do will probably be to improve the condition of the Russian Jew. Prevent the Hindoos from poisoning themselves with their ho'y water, with which they drink the blessing of cholera. Enact laws to isolate the syphilitic, the tuberculous, and the leper. Prohibit the marriage of such. Prevent the congenitally incurable from reproducing themselves; let them die isolated from all healthy persons. Let those whom nature has fitted out for life have the inheritance.



## CONDITIONS OF LEPROSY IN JAPAN.

I conclude this volume with a letter I wrote last August to the *New York Sun*. It is about Japanese leprosy. My experience has been acquired in Japan, and these lines will help to show the condition of the lepers in Buddhist countries; and how useless any attempt at complete isolation must necessarily be, without the help of the government.

I have shown on every page of this book that it is my aim to obtain that help of government, not only in Japan, but in every country where lepers drag their weary life.

[From *The Sun* (N. Y.), August 6, 1896.]

### LEPROSY IN JAPAN.

ITS ANTIQUITY AND TREATMENT AND THE OPPORTUNITY IT OFFERS TO  
MISSIONARIES.

*To the Editor of The Sun: Sir*—The Rev. Mr. Edkins, the eminent sinologue, is undoubtedly correct when he puts the origin of leprosy in China in the time of the Chow dynasty, 314–1122 B. C. I beg permission to add some observations which I made, referring to the question of leprosy, in China and Japan.

In a Japanese work by Katakara Genshiu, published in Tokio, 1781, which Mr. Tsuchiya, the New York correspondent of the *Tokio Times*, and myself, translated three or four years ago, there is an allusion to the pupil of Confucius mentioned by Mr. Edkins who was supposed to be a leper. The diagnosis consisted simply in the fact that the master inserted his hand through the window casement of the patient's room, saying: "This good man has this hateful disease;" in Japanese, *Kono hito nishite, kono yamai ari*; and still more in the fact that the man was isolated. There is other and stronger evidence of the existence of leprosy in China at that remote time; but the story of Confucius's disciple is the first instance of isolation that we know of. In the same book two cures of leprosy are related, through methods which seem to have been in general use, and probably traditional; they are referred to the Sung and Yuen dynasties (960–1368 A. D.).

At the present time the disease rages in China with an intensity as great, at least, as at any past period, in the mari-



time southernmost provinces, Kwang-Sung and Fuhkien. According to Dr. Wong, the province of Canton counts 10,000 lepers in a population of 20,000,000 or 30,000,000.

Leprosy is thought by the Chinese to be contagious and hereditary. Chinese laws are intent on preventing the birth of children of leprous parents. A healthy person is not permitted to marry a leper; this union is supposed to produce a leprous progeny. Among lepers themselves the same degree is allowed to unite with the same degree. By degree is meant the age of the disease, counted by generations. The grandson of a leper may marry the granddaughter of a leper. In the lapse of the fourth generation is accomplished the process of purification, the result of which is perfect immunity. This is a universal law on the matter in the whole Orient.

A few words about the different forms of the disease in China. In ancient times three diseases were included in the genus *lepra*—that is, they were considered, though different, as being the same disease: Itch, elephantiasis from the mosquito poison, and leprosy proper, or Arabian.

As to the origin of leprosy, the Chinese always fall back upon a cold. Their printed character and that also of the Japanese to designate leprosy is a combination of the sign which means disease, and that which represents wind or catarrh. All the Chinese names of leprosy suggest an origin from cold; cold wind, paralyzing cold, hateful cold wind, skin catarrh, wet catarrh, swamp cold, etc.

I now pass the Yellow Sea. In a work by the noted Japanese leprologist, Dr. Goto (the father of the Goto who recently was called by the Hawaiian Government to Honolulu, to introduce his own method of treatment in cases of leprosy), which has been translated by Mr. Tsuchiya and myself, the disease in Japan is traced back to the time of the Emperor Shomu, who reigned from 718 to 740 A. D. This potentate built the great "Daibutz," bronze Buddha, at Nara, near Kioto; this place is the oldest leper village of which there is any mention in that country. His wife, the Empress Gemeiyo, is said to have washed a thousand lepers with her own hands, as a work of self-castigation. She built a number of baths and asylums; this is the first record of isolation of leprosy in the kingdom of the Rising Sun. A little legend closes the relation of this pious performance. When the energetic lady had finished her nine hundred and ninety-nine first lepers, and come to the last, she found him the most offensive of all; but she did not shrink from the uncongenial task; she washed him

gladly, and thus satisfied her vow. But when she had done, the body which she had purified was enveloped in light, and she saw that it was not a man to whom she had rendered her service of mercy, but Buddha himself. Considering that this legend mentions a thousand lepers, it is reasonable to assume that the disease had existed long before. It was after this beautiful example given by Gemeiyo, if it was not done before, that the Buddhist priests instituted what we would call an order devoted to the care and general interests of lepers. All lepers of Japan belong to it.

The Japanese authors mention two methods of treatment, or rather two cures. The first was imported from China in the time of the Sung and Yuen dynasties. It consists in the use of acupuncture needles. "Let the patient sit down naked in a darkened room; burn camphor as a light, and examine the entire surface of the body. In this way the poison under the skin may be seen plainly by the physician. Circumscribed blood spots of various shapes will appear beneath the skin. If they are scarlet, the poison is not severe; if dark purple, it is of great strength. The physician marks with ink the circumferences of these spots as they are seen by the reflected camphor light. The spots are mostly on the face, hands, feet, and neck; very few of them are found on the chest or abdomen.

"Open the windows and puncture the spots with red hot needles; the latter, heated in a charcoal fire, are used one by one within the marked places. Generally there is no bleeding nor is there any pain felt; if there is bleeding and pain the spot operated on is not leprous. The needles may be introduced even to the depth of an inch, without causing any pain. After these operations the patient's body shows high temperature, his face reddens, his mouth is dry, and there is headache and intense thirst. Give him warm water to drink, and apply the hot flat-top needle to his bald vertex with a quick touch; thereupon he feels relief. The needles are used three days in succession; on the second day the acupuncture is made in the intervals between the first day punctures, when, however, the needle cannot penetrate deep without causing pain; on the third day again puncture in the existing intervals."

It cannot be denied that this treatment must be efficient, for it is clear that if every leper spot, or, as we might say, every bacillus, is disposed of, so is the disease itself.

The other method consists in the use of turpentine or

boiled pine wood. It has been used at least for the last 2,000 years; for Kakko, who wrote in 300 A. D., has a mention of it in his book "Prescriptions Behind the Elbow," that is the pocket of the sleeve. We find a mention of it also in the "Thousand Golden Remedies," compiled in Japan 640 A. D. "Take some pure turpentine, boil it in a clean pan with spring or rain water, keep stirring it; when it becomes muddy and bitter pour into cold water. Boil repeatedly until the liquid turns white and loses its bitterness. Dry in the shade; grind into powder, and make it fine. Use it thus: Make a soft boiled rice, mix the turpentine thoroughly with it, and eat freely of it. If the patient is thirsty, let him drink nothing but pure water mixed with the turpentine powder. After ten days' use, if vomiting and purgation come on, they are favorable symptoms. Resume the treatment from time to time."

It is evident that the beneficial results of this treatment are not so mathematically certain as those of the first. It was built upon the theory that the disease was due to the activity of worms, for it is a modification of the general worm treatment. Both these treatments undoubtedly were imported from China, as was the disease itself. We may say at once that most things, medicine and every other science, in heaven and on earth, were imported from the same country.

Of course there exists in Japan the regular religious method, dear to the multitude of all countries, whether Christian or pagan. It consists in pilgrimages to certain shrines consecrated to the particular god who is peculiarly touched by the sufferings of the lepers, and makes it his specialty to protect and care for them. Once a year every leper goes to his altar. It is like the Lourdes pilgrimage.

Allow me to wind up this letter by quoting from an address which I made in 1892 to a body of Japanese Christians:

"There are in Japan many thousand lepers, forming, so to speak, a horrible élite in a miserable army composed of millions of outcasts, beggars, and persons exercising debased professions—an army so numerous that no European can compute their numbers; for it is well known to those who have lived some time in Japan and were interested in the state of the people, that the Japanese conceal their social sores with a jealous and peculiar care, by reticence in conversation and in records, from the knowledge of strangers. All these people, weary and heavy laden, have found spiritual solace alone in the Buddhist faith; help and protection in its priests. They have learned to bear their miseries and fortified themselves against despair. No hand was ever reached out to

them excepting the hand of this Church of Buddha, whose superstitions and traditions came to be their comfort. Buddhism, however, has not healed the leper sore, in spite of the care it has administered to it for centuries. This class is to-day materially the same as it was a thousand years ago. This social stain is the opportunity of Christianity; and by improving the condition of the lepers and elevating the whole debased class, Christianity can hopefully combat the strong power of an old religion.

"As a physician, I may say that leprosy in Japan is a disease of villages and hamlets, and is not to be found in cities where our missionaries abound. I add to this fact that there is little danger to be apprehended from contact with these unfortunates if they are dealt with properly.\* There are many Buddhist doctors who are specially devoted to the care and treatment of lepers only. In a suburb of Tokio there is a doctor family which for three generations has made a specialty of the treatment of this disease; with their families they have inhabited the same houses with twenty or thirty lepers at a time, without fear of contagion. In their three generations they have known of no case of probable contagion, and I may say, so far as our own missionaries to the Japanese are concerned, there need be no fear of any such contagion as is said to have happened in Molokai to Father Damien. Around and about Tokio there are many leper villages known only to medical men—one, notably, on the road between Tokio and Yokohama, where there reigns dreadful misery. The Japanese do not discuss this question with any degree of candor, and to find these plague spots, and to do good there, they must be sought for unheralded and alone. In this humble and solitary way, I repeat it, Christianity can enter a wedge into the body of an old religious society. In a few words, this is what Christianity must do for this people: It must bring to the poor and the outcast sympathy and help, oil to the leper's sore, and it must come as the physician. Christ came thus, healing much more than speaking; and it was His healing power, perhaps still more than anything else, His healing of the lepers of His time, which made the multitude crowd around Him."

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ALBERT S. ASHMEAD, M. D.

\*It must be borne in mind that though lepers may live under a doctor's roof, there is absolute separation of caste between them and their physician. The diagnosis of Leprosy of a rich man or a prince throws him into the lowest class, and he is henceforth an outcast. He may contaminate beggars, Ilinins, Eta, and other outcasts, who are willing to come into contact with him, but there is a stone wall between him and all the better classes, even the doctors who treat him.



**JAPANESE LEPEBS OF THE THIRTEENTH CENTURY.**

I print here a copy of a Japanese painting by Tosa Yoshimitsu. The original was painted in the thirteenth century. This copy is printed by Kiosai Gwadan, in a book called "Stories About Paintings," published in Tokyo, 1887. It illustrates the life of Yugio Shionin, a wandering priest. This wandering priest founded a Buddhist sect in the thirteenth century. The priests of this sect do not stay in churches, but go preaching from place to place. One of their temples is in Fujisawa, near Kamakura. It is noted for being a leper asylum. Lepers come there from all parts of Japan for prayer. It is the specialty of the Buddha of that temple to cure leprosy. The original picture by Tosa is still in the possession of the priests of this temple.

The picture represents beggars and lepers. The leper claw is shown in two individuals. Tuberculation of the face, hands and arms is apparent in two others; ulceration of head and face in two others.



## INDISPENSABLE RULES FOR THE SUPPRESSION AND PREVENTION OF LEPROSY.

The following rules are absolutely indispensable for the suppression and prevention of leprosy :

1. Compulsory isolation by government edict.
2. Supervision of the leper's family, especially the children of lepers, for seven years after the separation of the leper.
3. Establishment of leper colonies, as farms, with or without the leper's family, in the driest climate possible. If there is no such climate in the leper's country, the sufferer is to be transplanted into dryer parts.
4. At the death of the leper, whose family have lived with him, a second separation of the family to a station of observation for seven years, at the end of which time, if nothing has happened, that family may be considered clean, and be again adopted by the nation.
5. An asylum for the destitute children of lepers, until after puberty.
6. The destruction of all clothing, etc., having belonged to a leper.
7. Special cemeteries whose corpses are never to be moved; or crematories.
8. *Absolute non-interference with the leper's religion.*

### RESUME.

I resume my position thus: 1. I deny that anything has been done for the leper, through the discovery of the bacillus, or in any other way. I have already said that the bacillus does not lay itself open to any medical attack, that nothing can be obtained of it, that no remedy has been got out of all the studies, experimentations, manipulations, etc., of which he has been the object, since his entrance into the scientific world. Other remedies, proposed independently of this microbe, are the fruits of sheer empiricism.

2. That consequently anybody who *seriously, truly* wishes for the abolition of the terrible disease, can hope in nothing else but isolation, and isolation absolutely alone. Every other thing that may occupy a leper congress, for instance, is time consciously wasted in useless speeches and disputations.



## APPENDIX.

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I select under this title the following from my correspondence, in order to give the reader a clearer idea, if this is necessary, not only of the scope of our undertaken work, but also of the manifold efforts we have made to gain sympathy for it, and non-professional allies and helpers.

NEW YORK, August 30, 1896.

HIS HOLINESS POPE LEO XIII,

Rome :

*Holy Father*—I humbly address to you a petition in behalf of several hundred thousands of most unhappy beings, all over the world—the lepers ; and I hope, or rather am sure, that Your Holiness will not withhold that helping hand, in which there is so much power to bless. It is proposed to hold, next year, a congress of leprologists and delegates from all civilized countries, one from each, for the suppression and prevention of leprosy. The delegates of the various countries will form a permanent international committee, to meet once a year, to which all questions relating to leprosy will be submitted. This committee will raise a fund for the support of leper asylums, and the sending of specialists to those points where their services are needed. . . . The international committee is the central and essential part of this philanthropic scheme, because its members will represent each the government of one civilized country. The leprologists who will attend, either as individuals or as representatives of societies, may discuss questions of bacteriology, pathology, and cure ; but it must, of course, be reserved for the delegates of the governments to formulate laws for the isolation of lepers, etc.

The influence of Your Holiness does not only extend to Catholic countries ; it can make itself felt everywhere. But we count more especially on your power to assist our efforts in those countries which belong to the Catholic faith—that

is, Italy, France, Austria, Spain, Portugal, Brazil, Mexico, the Republic of Colombia, the Argentine Republic, Venezuela, Ecuador, Bolivia, Peru, etc.

There are, Holy Father, 200,000 lepers in India, 100,000 in China, 100,000 in Japan, 27,000 in the Republic of Colombia, 800 in Norway, 1,250 in the Sandwich Islands, 500 in the United States, 500 in Cuba, etc.

Leprosy is an incurable disease, and the miseries it entails are above all description. The leper must be cared for all his life; that is, from the date of the outbreak of the disease, the latter having a duration from eight to twenty years. Leprosy is supposed to be inoculable, either directly or indirectly. Wherever lepers are not isolated, the disease spreads. The only hope of eradicating it is in isolation; and isolation cannot be enforced except by government influence. Isolation of the lepers, by a concerted system, energetically maintained by all governments interested in the question, will suppress the disease. For prevention, other government regulations will be necessary, so as to stop the wandering leper, who might carry the seeds of the disease into other countries. Not the least work reserved for charity, is the care and treatment of the present victims of the scourge. This task might be undertaken by the Church, the Red Cross Society, and other charitable associations. The main point is to influence every power that exists, and is available, to exert itself in behalf of this great undertaking.

We therefore appeal to Your Holiness for an expression of sympathy, and an assurance that your help will not fail us.

I am, Holy Father,

Your most humble and reverent servant,

ALBERT S. ASHMEAD, M. D.

NEW YORK, August 30, 1896.

MISS CLARA BARTON, President of the American Red Cross Society, Washington, D. C.:

*Dear Madam*—A congress of leprologists, etc. . . . You will therefore see the importance of what we shall try to do. It has struck the committee that the Red Cross Society in every country can not fail to be struck by it, and to sympathize with our aims. Certainly the Red Cross can give an immense amount of help without exceeding the range of work which it has prescribed for itself. In the alleviation of the untold sufferings of an appreciable part of mankind, the

strength and activity of your great society will find a worthy employment. It is, I believe, not generally known how great is the number of the victims of this scourge. In India, there are 200,000 lepers; in China, 100,000; in Japan, 100,000; in Colombia, South America, 27,250; in Norway, 800; in the Sandwich Islands, 1,250; in the United States, 500; in Cuba, 500; and there are, of course, other countries for which I can give no figures. In some countries nothing is done for these miserable beings at all, no leper asylum, no provision whatever; even isolation is only a moral fact, produced by the horror of the disease itself. Wherever leprosy is not under some kind of control, it spreads; it is inoculable either directly or indirectly; it is insidious—that is, the effects of a contact may not be felt before the lapse of many years. Compulsory isolation is the only means we have to eradicate it. All his life the leper must be taken care of, for his disease is incurable. It is this work that the congress will undertake, to establish on safe and permanent foundations, and for which the provisional committee now appeals to you and to the Red Cross Society all over the world, through you. Will you consider these things, and bring them also before the representatives of the other branches of your great society?

You could, we think, help us much by urging upon President Cleveland the importance of this movement; the other societies, at your request, might render similar services to the cause, by urging upon their respective governments the Christian duty, I do not think I say too much, to send a delegate to the congress. We hope that each national branch of the Red Cross Society will be represented.

I am, dear Miss Barton, your very obedient servant,

ALBERT S. ASHMEAD, M. D.

U. S. EMBASSY, LONDON, September 22, 1896.

DR. ALBERT ASHMEAD,

New York, U. S. A.:

*Dear Sir*—At the Ambassador's request, I have much pleasure in enclosing herewith the answer from Sir Arthur Bigge to your letter addressed to the Queen.

I am, dear sir, your obedient servant,

JOHN RIDGELY CARTER,

*Secretary to the U. S. Ambassador.*

BALMORAL CASTLE, September 21, 1896.

DR. ALBERT ASHMEAD,

New York :

*Dear Sir*—In reply to your letter addressed to the Queen, and forwarded through the Embassy of the United States in London, I have the honor to inform you that your communication has been duly laid before Her Majesty, who is interested in hearing of the proposed International Congress for the Suppression and Prevention of Leprosy. Your letter has now been forwarded to the Queen's Ministers, in order that the question may be considered and dealt with by those who in all such matters must be Her Majesty's responsible advisers.

I have the honor to be, dear sir, yours very faithfully,

ARTHUR BIGGE,

*Private Secretary to the Queen.*

ARCHBISHOP'S HOUSE, 452 Madison Avenue,  
NEW YORK, September 5, 1896.

DR. ALBERT S. ASHMEAD :

*Dear Doctor*—As your letter has already been forwarded to Rome, I beg to return to you the enclosed copy which you had the kindness to send me. On reaching Rome your letter will be duly translated, and presented to the Pope. He neglects no communication, no matter how unimportant.

I am, dear doctor, very truly yours,

M. A. CORRIGAN.

NEW YORK, October 26, 1896.

H. R. H. PRINCESS MARY OF CAMBRIDGE, DUCHESS OF TECK,  
White House, Richmond Park, London.

*Madam*—I take the liberty to bring to your notice a benevolent scheme in behalf of all the miserable beings who are now, in various countries, especially in the British Empire, the victims of the most horrible of all diseases, leprosy. I enclose you a clipping from the British Medical Journal of October 3d, which partially outlines the plan. I also send you an extract of a letter which I wrote to Miss Clara Barton, President of the American Red Cross Society, and an extract of another letter which I addressed to His Holiness, the Pope. Dr. Hutchinson wrote me proposing London as the seat of the congress mentioned in those papers, and suggested that, in all probability, H. R. H. the Prince of Wales would consent to act as president, if the congress met in London. You will

also find a letter forwarded to me by our Minister from the Private Secretary, Sir Arthur Bigge, of the Queen of England. With the expressed interest of Her British Majesty in our movement, and the probable presidency of the Prince of Wales, our enterprise bids fair to meet with success. May we hope that Your Royal Highness will actively interest yourself in this movement, so that it may start off with the support of the British government, the Church of England, and of the Red Cross Society? My aim has been to have the call for this congress issued by a government, so that official delegates can be appointed by every government, each with the power of his own government behind him. These delegates will form a permanent world's committee on leprosy. The scientific men, the leprologists, may discuss the questions pertaining to leprosy. The Red Cross influence will take care of the present victims of the scourge, and the Christian churches exercise their powerful influence upon the different governments.

Dr. Hutchinson will be the representative of this great scheme in London. To accomplish our end, which is the suppression and prevention of leprosy, public opinion, in England, must be moulded, and the benevolently inclined must be induced to take an active interest. I shall at the same time apply to the Baroness Burdett-Coutts, with whose husband I am related. May we hope that Your Royal Highness will give us a support which would be most precious, and help to make a success of an enterprise which would be one of the greatest achievements of the age, and one of the many glories of Queen Victoria's reign.

I have the honor to be, of Your Royal Highness,  
the most obedient servant,

ALBERT S. ASHMEAD, M. D.

NEW YORK, October 26, 1896.

BARONESS BURDETT-COUTTS,  
London:

*Madam*—I have no doubt you will pardon the liberty I take in addressing you on a subject which will certainly appeal to those philanthropic sympathies which have made your name famous and beloved. In this case it is not money that is wanted; it is sympathy and moral support.

A scheme has been devised for the suppression and prevention of one of the most terrible diseases that ever afflicted humanity—leprosy. It is not likely that the awful extent of

the sufferings resulting from that scourge is known to you, and therefore I will say a few words about them. I cannot do that better than by quoting out of my article, which was intended as an appeal to all Christians to contribute their sympathy and support to help us start a congress for the suppression and prevention of leprosy, from which we hope everything. We do not beg for money, and those funds which may be required and promised shall only be drawn upon after the congress has met, and the World's Committee has been established.

#### APPEAL IN BEHALF OF A WORLD'S COMMITTEE ON LEPROSY.

"And there met him ten men that were lepers, which stood afar off; and they lifted up their voice, and said, Jesus, Master, have mercy on us."—*Luke xvii, 12, 13.*

A congress of leprologists from all over the world, and official delegates appointed by the governments of all civilized countries, will be called next year at Berlin. The delegates will form a permanent international committee for the suppression and prevention of leprosy. This committee will collect a fund to be applied to the maintenance of leper asylums, in leprosy countries, wherever such extraneous help will be necessary, and even to send specialists to take charge of the work in such countries, and also to assist non-supporting asylums. To this work of philanthropy all Christian people are invited to bring their mite. It is hoped that, by the efforts of this committee, the dreadful scourge will be in time entirely obliterated.

Mankind has never been invited to contribute to a greater work. There are to-day 200,000 lepers in India, 100,000 in China, 100,000 in Japan, 1,250 in the Sandwich Islands, 27,250 in Colombia, South America; 500 in the United States, 500 in Cuba, 800 in Norway, and other countries have their contingent. It is positively proven that isolation of lepers is the only known means of eradication. There is no cure for the disease, and death is the only hope of the miserable leper. It is a disease which passes from man to man by inoculation, either directly or indirectly. Wherever a leper exists, and is not isolated, there is a danger for the community. The disease is insidious, and the consequences of a contact with a leper may appear only after many years. No one who has not lived in a leper country knows the miseries entailed upon the victims of this disease. There are mutilations—



hands and feet reduced to clubs; fingers and toes dropped off; nose and eyes eaten away; the whole flesh becomes a mass of corroded sore. The unfortunates struck by this calamity are excluded from all intercourse with mankind; they are outcasts; they die like dogs. Surely, the international committee for the suppression of leprosy has before it a work greater perhaps than any that Christianity and philanthropy have ever undertaken. And surely, the appeal we make to all Christian and benevolent hearts, ought to meet with a passionate response from the millions who sympathize with the sufferings of mankind.

ALBERT S. ASHMEAD, M. D.

Her British Majesty, through her Private Secretary, Sir Arthur Bigge, has written me a letter expressing interest in the enterprise and has submitted the matter to her Ministers for their advice. I enclose his letter. I also enclose an extract of a letter written a few weeks ago, to Miss Clara Barton, President of the American Red Cross Society; also a letter written to His Holiness, Leo XIII. My aim is to bring together the four powers, whose coöperation will bring our scheme to a certain successful issue: the influence of governments; the influence of the Roman Catholic Church (for many leprous countries are Catholic, and in them the clergy is omnipotent); the influence of the Red Cross Society, to care for the present victims of the scourge; and last, and I will say least, the influence of the specialists, the leprologists. I said least, because I know very well that these learned gentlemen would speak for half a century, and no practical good would come of all their talking. The good can only be effected by men and women who, without any scientific learning or pretension, believe and feel as I always have thought that Baroness Burdett-Coutts believed, that life is not worth living if it is not employed for some great purpose.

I wish especially to bring to your Ladyship's knowledge a thing which I have not been able to bring to the understanding of several very learned men. To make a success of such a congress, it is necessary that a *government*, or some person in great authority, shall issue the call for the congress. In this way only can we obtain official delegates from the other governments. Everything else, meeting of leprologists, of learned men of every country, celebrated, one for this discovery and another for another, would simply end in idle talk, to the honor of this or that learned doctor, but with

no useful result for the lepers. We want to do something practically and permanently good. For all the miserable creatures who are the victims of leprosy, no amount of talk and learnedness can do anything. If we have a committee, of which each member represents the good intention and the power of a government, we shall be able to make laws for the isolation of lepers, and for everything that is necessary to suppress the horrible scourge, after the present generation of lepers has died out. Leprosy is not hereditary; it is contagious. We may suppress entirely the horrible infliction, if we make a resolute effort against it.

I have written to H. R. H. Princess Mary of Cambridge, Duchess of Teck, and if I obtain her sympathy and yours with our movement, I have no doubt but that the whole womanhood of England will be on our side. I shall have done nothing, Lady Burdett-Coutts, if I have not persuaded you that the only hope we have for any practical success, is that the British government shall issue the call for our congress.

I have the honor to be, dear madam,  
Your obedient servant,

ALBERT S. ASHMEAD, M. D.











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